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Educational News and Editorial Comment

SOME EDUCATIONAL IMPLICATIONS OF INTERNAL MIGRATION IN THE UNITED STATES

Owing to differentials in the rate of reproduction in the urban and the rural population, to differences in the economic resources of communities and regions, to improved means of travel and transportation, to technological advances in agriculture, and to other causes, there has been for a number of decades a marked increase of internal migration in the United States. While some movement of population from city to country has taken place, the great majority of migrants have moved from farms to villages and urban communities. Before 1930 there was a continuous flow of population from farm to city, across state lines, and from region to region. During the 1920's the total net migration of the rural-farm population amounted to nearly six million persons. During these years the drawing power of the cities was fully as great as that of the frontier or cheap land in the middle of the last century. It was, however, the southern farms that supplied the labor resources of the nation during this decade of phenomenal urban concentration, approximately 60 per cent of the net migration from farms being from farms located in the South.

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The high degree of mobility which has prevailed among the American people means that many persons are spending their mature years in states or regions other than those in which they were born or in which they received their education. In 1930, for example, approximately 24 per cent of the native-born population of the United States were living in states other than the state of their birth. In many states, of course, the percentage of persons born in other states was much greater than the national average. For a few selected states the percentages were as follows: Michigan, 29; Delaware, 30; Kansas, 37; Florida, 47; Oklahoma, 50; California, 50; and Wyoming, 64.

It is highly important that the prospect of future migration be taken into consideration in the determination of a national educational policy. It is common knowledge that the educational opportunities afforded rural youth, and in particular the rural youth of the South, are markedly inferior to those afforded youth in most urban communities. If a large portion of the rural youth of America are going to find it necessary to leave the farm in search of economic opportunity, sound social policy would seem to require a fundamental reorganization of education in the poorer rural areas. In the first place, some means must be discovered whereby farm children can be afforded a richer and a more extended educational experience. In the second place, it will be necessary to give rural education a new direction, a new orientation. An educational program of the right kind can be made an effective instrument for the promotion of migration and for the better adjustment to the life of the community of persons who do not migrate.

A recent volume prepared by Carter Goodrich and others, which has been published under the title *Migration and Economic Opportunity*, subjects to detailed and minute analysis the evidence bearing on the desirability and necessity of future migration in the United States. The book is the Report of the Study of Population Redistribution, which was organized in 1934 under the auspices of the Industrial Research Department of the Wharton School of Finance and Commerce of the University of Pennsylvania. The study was instituted by the Social Science Research Council and received the support of the Rockefeller Foundation.

The general conclusion is reached that in a number of areas in the United States the pressure on economic resources is so great that migration represents the only escape from stabilized poverty for large elements in the population. The evidence indicates, too, that it will be difficult, if not impossible, for American agriculture to absorb any large part of the surplus farm population. There are four major areas in which there are serious maladjustments of population to the economic resources of the areas: the Southern Appalachians, the old cotton belt of the Southeast, the cut-over region of the Great Lakes states, and the Great Plains.

In the coal-plateau counties of the Southern Appalachians the birth-rate is excessively high and economic opportunity extremely limited. After making an analysis of the agricultural, forest, mineral, and manufacturing resources of the area in relation to possible absorption of labor, the authors of this volume reach the following conclusion. "The Southern Appalachian plateaus emerge from our analysis as a region of severe pressure of population upon resources, not likely to be fully relieved by any expansion of industrial employment that can now be foreseen." The net minimum migration which seems highly desirable from the coal plateau is placed at 340,000, or 14.5 per cent of the present population, and it is estimated that the migration of a much larger number would be necessary to relieve fully the pressure of population on the resource structure.

Because of the larger numbers involved, the maladjustment of population in the old cotton belt of the Southeast constitutes an even more serious problem. Here, too, the rate of natural increase is excessively high. With no migration and with present reproduction trends, by 1960 the population of many of the southern states would increase by more than a million. The increase in the population of the six cotton-belt states of the Southeast would be 5,393,000 and of the entire cotton belt, 10,600,000. The excessive pressure of population on the resource structure of the old cotton belt is not due alone, however, to the high birth-rates prevailing in that area. A number of factors are operating to reduce materially the population that southern farms are able to support. There has been, and is, an enormous wastage of soil resources through erosion. The cotton farmer of the Southeast finds it increasingly difficult to compete with

the Southwest, where the land is both more level and more fertile and where it is possible to carry mechanization further. The development of a successful cotton-picker, which seems not at all unlikely, could scarcely have any other effect than the disruption of the cotton economy of the Southeast. The most serious threat, perhaps, to the cotton farmer in the Southeast is the loss of foreign markets. In 1933–34 foreign cotton production exceeded that of the United States for the first time since the Civil War.

The situation in the cotton states of the Southeast is summarized by Goodrich as follows:

> Although the farming population of the old cotton belt has, in the recent past, participated in three large-scale migrations—to the cotton areas of the Southwest, to the growing mill towns of the Piedmont, and to the northern centers of industry—the region as a whole has retained much of its surplus population. The result has been subdivision of farms, higher tenancy rates, a gradually mounting cotton surplus, and a falling level of farm income dramatized by recurrent price failures. In the face of a changing agriculture, whether the point of emphasis be mechanical cotton-picking, restricted acreage, or narrowed markets, it is this area which possesses the poorest equipment for survival, which will be able to support fewer and fewer people. Undoubtedly, therefore, industrial revival will see the resumption of internal migration.

The estimated minimum migration which is desirable for the old cotton belt is placed at two and a half million, and, in the event of the loss of world markets or the mechanization of cotton-picking, at six or seven million.

The cut-over region of the Great Lakes states is another area in which there is a serious maladjustment of population to economic resources. The seventy-six counties of northern Michigan, Wisconsin, and Minnesota, which comprise the cut-over area, contain approximately 42 per cent of the land area and 14 per cent of the population of these states. In these counties the soil is generally unsuited to agriculture. It is, in the main, thin and sandy, has poor drainage, and contains an excessive amount of peat. The farm population receives an exceedingly low income. In 1929, in more than half the counties, the gross cash farm income was less than $200 per rural-farm inhabitant. The region is rich in mineral resources, but competition and technological advance make it impossible for the mining industry to absorb the surplus population.

The fourth region subjected to detailed analysis is the Great Plains, that area extending from the Rocky Mountains to the prairies. The climate of this area is characterized by alternate periods of rainfall and drought, neither of which is predictable as to occurrence or intensity. In the past, during periods of heavier-than-usual rainfall, population has moved in and farm acreage has been increased; in periods of severe drought, a large part of the population has been in poverty and distress and many have been compelled to seek homes elsewhere. Despite the fact that some 150,000 persons moved out of the Great Plains area during the period 1930–35, there is still a population surplus. In terms of the 1930 population, the minimum reduction of population consistent with the safe use of land is estimated to be approximately 390,000 persons.

It would be a mistake, of course, to assume that the four areas described in the preceding paragraphs are the only areas in which there is, or is likely to be, a surplus population. In the Ozarks, in the coastal plains of the Southeast, and in various other places there is a maladjustment of population differing only in degree from that in the four areas described.

Nor is the probability of extensive future migration confined to certain less-favored areas. It is very unlikely that American agriculture will absorb any large fraction of the future increase of the farm population. The mechanization of agriculture and the resulting increase in productivity of farm labor make highly probable an extensive future migration from farms. From 1870 to 1930 productivity per agricultural worker increased 150 per cent. There is little reason to suppose that technological advance will not continue. After a careful analysis of the evidence, the following conclusion is reached with respect to the farm population necessary to provide the agricultural products required to meet the needs of the American people.

> Thus, assuming that per capita consumption and exports remain substantially at the 1930 level, a farm population no larger than that of 1930 could meet the requirements of the greatest expected total population if the annual increase in agricultural efficiency during the next twenty-five years is hardly more than one-fourth the rate of increase from 1870 to 1930. . . . . And a farm population of only 2.5 millions more than that of 1935 could meet these requirements without any increase in the 1930 output per worker. Such a farm population will be

reached in five years if the surplus of births over deaths continues to remain dammed up on the farms.

The following paragraph calls attention to some of the changes in educational policy which migration would seem to require.

But the problem of fitting migrants to take a more intelligent part in the work and in the social responsibilities of the communities to which they must go strikes still deeper and demands a reorganization of the educational systems in the poorer agricultural areas. It calls in the first place for a change in orientation. There as elsewhere our existing education, whether specifically vocational or not, is largely aimed at preparation for the kind of life now lived in the immediate neighborhood. But if a large proportion of the young people must be sent out to other regions, it should be recognized that their training requires a different direction. In the second place, and even more obviously, there is an urgent need for far more thoroughgoing education than most of these communities now provide or can possibly afford. County by county the country over, there is an extraordinarily high negative correlation between income standards and social expenditures on the one hand and the birth-rate on the other. Where there are proportionately the most children to bring up, and where an unusually large fraction will have to live their working lives somewhere else, there is the least money to devote to the difficult job of their education. Thus, as Lorimer and Osborn have pointed out, ". . . . each new generation of Americans is tending to be disproportionately recruited from areas with low standards of living and inferior educational resources. The constant stream of migrants to urban areas from marginal mountain and coastal areas in the North, from the Southern Appalachian area, and from marginal cotton lands, enforced by current reproduction trends, is steadily working to counteract the educational efforts now being made in American cities." If these newcomers are to be fitted for life in the more prosperous communities, it would seem that the latter should and must bear part of the cost. Such a contribution appears the more reasonable since many of the cities are producing too few children to replace their present populations and are thus dependent on a flow of young people from the farms. It is not within our competence to suggest the educational program or the fiscal arrangements under which this help should be given, but the argument for federal aid for education in the less favored areas is one which follows directly from a consideration of the economics of migration.

Tendencies in School Enrolment

One of the most significant social changes of our time is the change in the age structure of the population. The declining birth-rate and the resulting decrease in the number of young children in the population are materially affecting school enrolment. Since 1930 enrolment has decreased in the kindergarten and the first five grades of the ele-

mentary school. Between 1930 and 1934 enrolment in the elementary grades decreased by 513,556. From 1931–32 to 1933–34 the increase in the number of pupils enrolled in the public schools amounted to only 158,752. During this biennium there was an actual decrease in public-school enrolment in nineteen states. By 1940 the declining child population will begin to affect high-school enrolment, and after that date we may expect a decline in the numbers attending high school unless the decline in the number of children is offset by an increased school attendance on the part of children of high-school age.

The following paragraphs, summarizing the tendencies in enrolment in both the elementary and the high school, are quoted from chapter ii, "Statistics of State School Systems, 1933–34," of the *Biennial Survey of Education in the United States: 1932–34* (United States Office of Education Bulletin Number 2, 1935).

Grade enrolment.—From 1930 to 1932 there was a decrease in the number of children enrolled in the kindergarten and in the first four grades. From 1932 to 1934 there was a still further decrease in these grades, and the fifth grade for the first time showed a loss in the number of pupils enrolled. The greatest decrease in enrolment was in the kindergarten, amounting to 3 per cent from 1930 to 1932 and to 14.2 per cent from 1932 to 1934. During the four-year period 1930 to 1934 the kindergarten enrolments dropped from 723,443 in 1930 to 601,775 in 1934, or 16.8 per cent. The decrease in kindergarten enrolments was due chiefly to the fact that many cities after 1930 began to eliminate some or all of their kindergartens so as to help reduce expenses during the period when boards of education were taking drastic measures to economize; also to the fact that in some cities the entrance age to the kindergarten was raised.

There was also a great decrease in first-grade enrolments. In 1934 there were 213,344, or 5.4 per cent, fewer pupils in the first grade than in 1932; and 434,067, or 10.5 per cent, fewer pupils than in 1930. This loss, as has been explained in previous reports, has been due to the falling birth-rate.

The sixth grade and each of the following grades show an increase in enrolments from 1932 to 1934. The enrolment in the sixth grade increased by only 10,138 pupils, or 0.5 per cent. The greatest numerical increase was in the second year high school, the increase being 152,923. The greatest percentage increase was in the postgraduate high-school courses, the increase amounting to 38.4 per cent. The next greatest increase was in the fourth year high school, amounting to 15.3 per cent. The increase in each of the high-school grades was much less from 1932 to 1934 than from 1930 to 1932. . . . .

Elementary-school enrolment.—In 1934 there were enrolled in the public elementary schools 20,765,037 pupils. This enrolment was less than that of 1932

by 370,383, and less than that of 1930 by 513,556. Up to 1930 there was an increase from biennium to biennium; after 1922 the increase became less and less pronounced. Since 1930 there has been a steady decrease in the elementary-school enrolment, the decrease from 1930 to 1932 being 0.7 per cent; and from 1932 to 1934, 1.8 per cent; and from 1930 to 1934, 2.4 per cent.

The number of girls enrolled in the elementary grades has decreased to a greater extent than the number of boys enrolled. From 1932 to 1934 the number of girls enrolled decreased from 10,328,441 to 10,119,046, or 2 per cent; and the number of boys decreased from 10,806,979 to 10,645,991, or 1.5 per cent. From 1930 to 1934 the decrease for girls amounted to 3 per cent and for boys to 1.8 per cent.

High-school enrolment.—In 1934 there were enrolled in the public high schools 5,669,156 pupils. This enrolment exceeded that for 1932 by 529,135, or 10.3 per cent; and that of 1930 by 1,269,734, or 28.9 per cent. The increase in enrolment from 1932 to 1934 was much less than the increase from 1930 to 1932, the increase from 1932 to 1934 being 10.3 per cent and from 1930 to 1932, 16.8 per cent. Boys have been enrolling at a more rapid rate than girls. From 1932 to 1934 the number of boys enrolled increased from 2,530,790 to 2,802,122, or 10.7 per cent; and the number of girls increased from 2,609,231 to 2,867,034, or 9.9 per cent. From 1930 to 1934 the number of boys enrolled increased 32.5 per cent, and the number of girls 25.5 per cent.

The proportion of the total elementary- and high-school enrolment in high school in 1934 was 21.4 per cent, as compared with 19.6 per cent in 1932 and with 17.1 per cent in 1930. The relative growth of the high school may be better indicated by calling attention to the fact that in 1900, or 34 years ago, only 3.3 per cent of the total school enrolment was in high school. A comparison by states of the percentage of public-school pupils enrolled in public high schools shows that the percentages range from 10.6 in Mississippi to 30.9 in Wisconsin. The states having 25 per cent or more of their total enrolment in high school are Wisconsin, Washington, Utah, Massachusetts, Montana, Oregon, New York, California, Idaho, Indiana, and Wyoming. The states having less than 15 per cent of their total enrolment in high school are Kentucky, New Mexico, Tennessee, Georgia, South Carolina, Arkansas, Alabama, and Mississippi.

Here and There among the Schools

Helpful suggestions for the use of projects in objectifying teaching.—The Board of Education of Chicago has published a bulletin entitled *The Craft Techniques as an Integral Part of Teaching Method.* The term "craft techniques" is used to describe useful types of constructive work. The projects which make up the major portion of the bulletin have been conducted in the Chicago schools and were written up by the teachers who developed them. Two projects, "The

School" and "The Library," were developed in Grade I. In Grade II "The Farm" and "A Public Park" were the projects employed. Projects developed for Grades IV, V, VI, and VIII are as follows: "Safety and First Aid" (Grade IV A); "Colonial Life" (Grade V A); "What We Owe to Egypt" (Grade VI); "Seven Weeks in Mexico" (Grade VIII B). The work of each project is outlined in detail, and an extensive bibliography follows the discussion of each project.

Using the museum for the teaching of geography and cultural history.—The Brooklyn (New York) Museum has recently published a booklet entitled *Handbook of Brooklyn Museum School Service.* The booklet describes in detail the attempt of the museum to make available to the schools of Greater New York many of its educational and cultural resources. A grant from the Carnegie Corporation of New York to the museum has made possible the development of this service to the schools. The "service" consists of "some 244 poster-like plates, chiefly in black-and-white line drawings, with descriptive texts as part of the plates." The plates are furnished for classroom use in the schools of Greater New York but are not for sale and are not available elsewhere. The booklet, however, should prove suggestive to those communities which desire to make a more effective use of their museum resources.

A handbook of desired professional qualities.—A recent issue of the *Journal of Education* carries the following account of the efforts of Julius E. Warren, superintendent of schools at Newton, Massachusetts, to improve the efficiency of the teaching staff and the quality of instruction in the Newton public schools.

A thirty-page statement of teaching principles was distributed to five hundred Newton public-school teachers at the first general teachers' meeting of the school year. The meeting, designed to correlate educational objectives, was the first to open the Newton school calendar in many years. Superintendent Julius E. Warren introduced "The Superior Teacher," a pamphlet growing out of the deliberation of a special teacher committee formed a year ago, and naming general standards of personal equipment, professional equipment, technique, and outcomes in terms of pupil activity and growth.

It was the original intention of the committee to accompany the handbook with a self-rating chart for each teacher. Instead, the booklet makes a comparison between the approved standards and those of the "average" and the "poor" teacher.

The handbook is but one illustration of this type of educational planning

under way in Newton. Similar committee discussion led to the recent radical changes in the public-school marking system.

Teachers are also receiving a guide for the teaching of reading in the elementary grades, the work of a committee of thirty-six, and outgrowth of a study program last year which led to the discovery that one cannot set a particular time in the life of all children when they can and habitually do read well.

An example of community co-operation in meeting the problems of youth.—We are far too prone to think of education in terms of what goes on in the schools. We realize in a general way that one's education is one's total reaction to experience. We know, of course, that the ideals and attitudes of youth are being molded in large measure by the home, the community, the motion picture, the press, and the radio, but we are commonly disposed to take the position that there is little we can do about it, that these forces must be permitted to play on youth with little control and direction. Such is not, however, the attitude of the citizens of Madison, New Jersey. For a number of years they have been carrying forward an unusually significant experiment in social engineering under the direction of a Social Planning Council. The work of the council is described by Dr. Harry Arthur Wann in the *New Jersey Educational Review*.

In Madison during the past eight years a social experiment has been conducted under the Social Planning Council. The leadership of all local institutions and agencies dealing with youth has been brought together in this council, to study the co-operative creation of a social milieu in which desirable educations can take place.

The Social Planning Council is composed of two representatives from the Catholic Church, Protestant churches both colored and white, Italian clubs, American Legion, American Association of University Women, Board of Education, Women's Clubs, Library, Young Men's Christian Association, Drew University, Parent-Teacher Association, Rotary Club, Kiwanis Club, Daughters of the American Revolution, Boy Scouts and Girl Scouts, Masons, and Elks. Committees are organized of representatives of all of the agencies dealing with a particular phase of community life. Together they study the problem and attempt to solve it from a community, rather than an institutional, standpoint.

A simple formula has been followed in all of the work of the Social Planning Council. Effort is made to answer three questions: (1) What are the needs? (2) How are these needs being met now? (3) How can these needs best be met? It is a formula requiring a community-wide approach to public health, recreation, leisure-time activities, guidance, and so on. It necessitates a careful evaluation of programs now in operation and a study of the best plans in effect in other communities, while the formulation of a local program is also necessary.

The work of the council may best be understood by a summary of the activities of some of its committees. . . . .

As a result of the Payne Fund Studies the commercial motion picture as a major factor in education is generally recognized. A committee of fifteen community leaders organized under the Social Planning Council to study the motion picture in relation to youth.

An intercommunity film association was formed with four neighboring towns in the same theater circuit. With the co-operation of the theater owner and the various managers, a film bulletin giving reliable previews has been published for the past three years. This bulletin appears bi-weekly and is distributed to parents, schools, churches, libraries, and other agencies. Parent discussion groups have been conducted in film study. High-school classes in social studies, English, and science have introduced units on the motion picture.

A State Finer Films Federation which brings together all of the film committees of communities and clubs in New Jersey has been organized as a result of the efforts of the local group. Children's Saturday matinees have been successfully planned in the various communities by the intercommunity film committee.

A gratifying improvement has been made in the quality of films now shown in the local theater. . . . .

For two years leaders of organizations and agencies working with children have conducted a case-study conference to discuss problems of maladjustment and, co-operatively, to help make adjustments.

This conference meets once each month for two hours in the office of the supervising principal for its general meeting. Included are a Catholic priest, pastors of the Methodist Episcopal, Presbyterian, African Methodist Episcopal and colored Baptist churches, visiting teacher, child hygiene nurses, high-school principal, elementary supervisor, relief director, Settlement House director, Y.M.C.A. secretary, police officer, supervising principal of schools, dean of the School of Religious Education of Drew University, and representatives of the North Jersey Mental Hygiene Clinic and the Morris County Tuberculosis Association. Regular casework procedure is followed.

The case history, school history, health history, and psychological records are presented, and a report is made by each agency which contacts the child on the experience which it has had with the case. Causes of maladjustment are determined, and a course of procedure to be followed by each agency is planned. Regular reports of progress are made at subsequent meetings, and the cases are continued until satisfactory adjustments are made.

The Community Case Study Conference is not only dealing with extreme problem cases but is stressing the need for a community-wide program of prevention. Indications of a tendency toward maladjustment are discovered early, and through a co-operative approach unusual results are attained. Juvenile delinquency has practically disappeared. It is the conviction of the members of the Community Case Study Conference that this type of co-operation of existing agencies in any community can practically eliminate juvenile delinquency.

How Chicago principals would provide for over-age pupils.—The findings of a study of the opinions of Chicago principals with respect to provisions which should be made for over-age adolescents are presented in the *Chicago Principals' Club Reporter*. The principals were asked to answer the following items in a questionnaire.

1. Do you believe that all children over sixteen years of age belong in a social group other than that provided in the elementary school?
2. Would you include children between the ages of fifteen and sixteen in this classification?
3. Do you feel that these children could be best provided for: (*a*) in specially organized classes in the high schools? (*b*) in the prevocational schools? (*c*) in some other way?

The answers to these questions are summarized as follows:

The qualified answers [to Question 1] suggested that the principals clearly favored or opposed the implied adjustments but objected to the inclusive character of "all children" in the statement of the question. As over 91 per cent of the replies favored a different social group other than that provided in the elementary school, it may be inferred that the majority considered chronological age as a reliable index of social and physical maturity. Only 4 per cent were opposed to the policy.

Wide differences in responses were noted when those for Questions 1 and 2 were compared. Only 48 per cent favored a change for the fifteen-year-old pupils while 36 per cent were definitely opposed. Opposition was based on the possibility of better adjustment in the elementary school for the late entrant, the physically weak, and the immature children who might become further maladjusted if chronological age were the sole criterion for grouping. Consideration of the data when they were arranged in a scatter diagram showed that many who were favorable to grouping without undue emphasis upon educational achievement for those two or more years retarded were opposed to inclusion of those only one year retarded. . . . .

The evidence pointed to agreement on the part of most principals that the seriously retarded adolescents need special adjustments which it would be impractical to provide in the elementary school. In Question 3 it was desired to secure a measure of the principals' opinions on the types of adjustment considered most appropriate for the retarded group. Unfortunately, the word "best" proved to be a limiting factor for some of the replies. Most principals with full cognizance of the individual differences among pupils expressed their views on the specially organized classes in high schools and the prevocational schools and, in addition, suggested new administrative or supervisory means for correcting the situation. As there were sixteen possible combinations of re-

sponses, the results will be set forth in Table I, which will give the types of stated provisions which were preferred with the frequency and percentage of the selection.

TABLE I

FREQUENCY OF THE PREFERENCES OF THE CHICAGO PRINCIPALS FOR SUGGESTED TYPES OF PROVISIONS FOR ADJUSTING THE RETARDED ADOLESCENTS

Type of Provision	Number	Per Cent
1. In favor of high-school adjustment:		
a) In specially organized classes in high schools	78	31.6
b) In specially organized classes in high schools and prevocational schools	38	15.4
c) In specially organized classes in high schools and some other way	5	2.0
d) In specially organized classes in high schools, prevocational schools, and some other way	12	4.9
e) In specially organized classes in high schools, not in prevocational schools	10	4.0
f) In specially organized classes in high schools, not in prevocational schools or some other way	2	0.8
g) In specially organized classes in high schools and some other way, not prevocational schools	3	1.2
h) In specially organized classes in high schools and prevocational schools, no new provision	2	0.8
2. In favor of prevocational schools:		
i) In prevocational schools	36	14.6
j) In prevocational schools and some other way	6	2.4
k) In prevocational schools, not in high schools	7	2.8
l) In prevocational schools and some other way, not in high-school classes	14	5.7
3. In favor of a new provision:		
m) In some other way only	16	6.5
n) In some other way, not in high-school classes	2	0.8
o) In some other way, not high or prevocational schools	12	4.9
4. No response to Question 3:		
p) No answer to method of provision preferred	4	1.6
Total	247	100.0

New courses of study in Seattle.—As a part of a program to organize the curriculum on a thirteen-year basis and to secure vertical articulation of work from the kindergarten through the high school, a number of new or revised courses of study were introduced into the schools of Seattle this autumn, according to an item by W. Virgil Smith, assistant superintendent, appearing in the *Seattle Educational*

Bulletin. A course in reading and literature has been prepared for all grades, the materials being organized around themes or centers of interest rather than around literary types. Courses in general mathematics have also been organized for Grades VII, VIII, and IX. In the field of the social studies, units have been worked out for all primary grades and for Grades V A and VI B.

Graphic illustrations of administrative procedure in the St. Louis public schools.—A booklet recently published by the Board of Education of St. Louis bears the title *Illustrations of Administrative Procedure.* The booklet contains photographic copies of the graphs, charts, outlines, and administrative forms prepared by the Board of Education for its exhibit at the meeting of the Department of Superintendence in St. Louis last February. Each graph or administrative form is accompanied by a brief interpretative explanation. In the Preface it is stated that the booklet was published in response to the many requests from all sections of the country for copies of the charts contained in the exhibit.

The Reorganization of Education in Illinois

It would be difficult to find any state in the union more sorely in need of educational reform than the state of Illinois. It is one of the few states which does not have a state board of education; it still selects its superintendent of public instruction by popular vote; it tolerates a type of local administrative organization which is both wasteful and inefficient and which gives it the distinction of having more one-teacher schools than any other state in the nation; and it has done relatively little by way of equalizing educational opportunity among the various communities of the state.

During the past three decades numerous educational commissions have been appointed to study the educational system of the state and to make recommendations for improving it. By and large, however, the work of these commissions has been fruitless; their recommendations have gone unheeded. The truth is that Illinois has suffered from a singular lack of vigorous educational statesmanship. The teachers of the state have pressed hard for increased state aid to schools; from time to time in various quarters there has been lukewarm advocacy of a state board of education; serious but unavailing

effort has been made to reform the antiquated tax system; but practically no one has had the courage to attack the most serious problem of all, namely, the reorganization of the system of local school administration. It is particularly gratifying, therefore, to learn that Henry Horner, the recently re-elected governor of Illinois, has announced his determination to raise the standard of Illinois schools to the highest level of educational and administrative efficiency. It is to be hoped that Governor Horner will give Illinois the type of educational leadership which it has so long and so sorely needed.

A Guide to the Use of Tests in Diagnosis and Instruction

The testing movement in this country has developed to the point that a large percentage of teachers have acquired the technique of administering both aptitude and achievement tests. It is equally true, no doubt, that relatively few teachers are thoroughly acquainted with the desirable and the legitimate uses of test results. Teachers in the elementary schools who feel the need of concrete, practical suggestions for the more effective use of test results will welcome the publication of a bulletin of the Educational Records Bureau which bears the title *The Use of Test Results in Diagnosis and Instruction in the Tool Subjects*. The bulletin was prepared by Arthur E. Traxler, research associate of the Educational Records Bureau and formerly psychologist in the University High School of the University of Chicago. The purpose and organization of the bulletin are described as follows:

> Many teachers who wish to become acquainted with the best methods of using test results are no doubt prevented from doing so because they cannot find time to canvass the whole body of literature dealing with the subject. It is the purpose of this bulletin to serve such teachers by (1) indicating principles and general procedure for the use of the results of tests following the testing program; (2) outlining very briefly and concretely some of the more important suggestions for remedial treatment based on test results in certain tool subjects; and (3) presenting a selected and annotated bibliography on diagnostic and instructional uses of test results, including references to diagnostic tests and instructional work materials.

The bulletin consists of three parts. General considerations in the use of test results are discussed in the first part. Various uses of

test results are listed, the principles governing the use of test results are stated and discussed, and general procedures in diagnostic and instructional uses of tests are described. In the second part suggestions for diagnosis and remedial teaching in reading, arithmetic, language usage, spelling, and handwriting are made in some detail by means of charts, which indicate types of disability, diagnostic procedures, and types of remedial treatment. The third part comprises a selected and annotated bibliography. At the beginning of the bibliography there is a series of general references on the use of test results. The rest of the references are arranged according to the tool subject with which they deal and are listed under each subject in three sections: (1) selected references on diagnosis and instruction; (2) diagnostic tests, and (3) instructional materials.

We commend this bulletin to the attention of elementary-school teachers everywhere. It may be secured from the Educational Records Bureau, 437 West Fifty-ninth Street, New York City.

Who's Who in This Issue

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RECENT TRENDS IN THE SOCIAL STUDIES FOR THE MIDDLE GRADES

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Among the permanent problems of middle-grade social studies are two which refuse to be relegated to the background. They *will be heard.* These two problems are: (1) What are the implications of the present trends in the curriculum offerings in the social studies? (2) How should the social studies in the middle grades differ from those in the junior high school and how should those in the junior high school differ from those in the senior high school? On the answers to these questions depend not only the kinds of experiences to be provided for children today but the permanent points of view of those children and the development of abilities needed in solving problems throughout life.

The most confusing aspect of curriculum construction is the fact that almost anything that can be inserted is of some value. Pressure groups have utilized this fact to their own advantage and to the resultant utter confusion of the elementary-school program. The question still remains: What knowledge (and experience) is of most worth from the points of view of social need, the demands of scholarship, and individual development?

In brief, four major curriculum trends can be noted: (1) the activity program, (2) fusion or integration, (3) *threads* of institutional developments, and (4) separate subjects. For years education has been threshing over these same topics, but each year has brought new developments.

THE ACTIVITY PROGRAM

The place of the activity program in the primary grades has been definitely established. In the middle grades, to judge from periodical literature and courses of study published since 1930, there has been little advance. In fact, the fusion or integration program seems definitely to be superseding the activity program, except in the case

of sporadic activities used for specific purposes. The possibility remains that many school systems are experimenting with middle-grade activities but are not printing their results until they come to definite conclusions. Another factor to be kept in mind is that the identical materials which were formerly designated "activities" are now often labeled "integrated units." In the junior high schools the widespread use of published materials has apparently frozen the activity movement into static form, but many progressive senior high schools are experimenting with this new type of program.

Subjects which frequently form the center of interest are (here I quote largely from the "Teachers' Lesson Unit Series" of Teachers College, Columbia University, as representative) such matters as banking (Grade VII), travel (Grade VI), the fishing industry (Grade V), constructing a garage (junior high school), corn (Grade V), street safety (kindergarten through Grade VI).

In a discussion of the advantages and the disadvantages of each of the trends, it is only fair to have in mind the movement at its best. Everyone knows into what the activity movement, at its worst, degenerated. The advantage theoretically accruing to schools using it is that the foundation of all learning is firsthand, direct experience. The enormous importance of experience as a means of securing reality and concreteness, as opposed to verbalism, and of furnishing the foundation upon which all later and more complex understandings can be built, cannot be overemphasized. If such firsthand experience is really secured through the activity program, it cannot fail to facilitate all the child's later learning. The disadvantage of the movement is that to carry it out as a practical school program on a large scale is almost impossible. The cost, in time and money and effort, of transporting entire classes almost daily to places where real, firsthand experiences can be secured is so great that it is prohibitive in the vast majority of schools. As a substitute, schools fall back on artificial representations: a cardboard street-lighting system, a mock city council, a "play" bank. Even if these substitutes are correct representations (and in many cases they are the merest travesties), they are all too likely to represent only the overt aspects and to supply little understanding of the *ideas* involved. Study habits are likely to suffer.

Even at its best, there is little or no connection in this type of program between one activity and the next, little cumulativeness of experience or continuity of viewing. School life becomes a hodgepodge and a patchwork rather than a growing, developing organism.

These pages are not the place to discuss the application of activities at the senior high school level. In the highly laudable attempt to connect instruction with life, it becomes a nice question where to draw the line between social makeshifts, which will be discarded the next year, and topics and principles of permanent value.

However, the activity program has served its purpose and has fulfilled its mission. It has demonstrated to the entire educational system the value of direct, firsthand experience in worth-while activities. All other curriculum trends show the effects of this influence; it has been added to the peculiar values of curriculums of other types. For this reason one is tempted to think of the old-time, bona fide activity program (outside the primary grades) as a phenomenon that is already passing.

THE PROGRAM OF FUSION OR INTEGRATION

The second curriculum trend is fusion or integration—terms having differing implications but often used interchangeably. Many changes in this movement have occurred in the last five years at the middle-grade level, though not so many changes are apparent at the junior high school level.

The earlier absurdities are, happily, being discarded. The extremists are coming down to earth and are recognizing the limitations of middle-grade children. Seldom does one any longer find such all-embracing units as "How People Work and Live, Especially in the United States," "How the World's Framework Influences Human Life" (both for the fourth grade) or "World Interdependence and World Indebtedness" (a single unit in the sixth grade). Let us hope that never again shall we see such a featured exhibit as one shown a few years ago at a meeting of national importance—a fourth-grade unit on "The New Deal," illustrated by a poster showing a farmer plowing under his third rows of cotton. The implications of such materials for fourth-grade children are staggering. There is still some tendency to include materials far outside the understand-

ings or interests of little children. For example, in a widely publicized unit on cotton for the fifth grade there is an explanation of cotton futures. We are still so eager to solve all the world's problems that we must begin on them in the fourth and the fifth grades regardless of the fact that the wisest adults in the nation are struggling vainly for a solution of those same problems.

On the whole, however, the fusion or integration tendency has been resolved into an alternation of units from history with units from geography or a combination of such materials within a single unit. For example, certain units tell how a section developed from early times to now; these are followed by a straight regional-geography study of the section. One needs only to state that program as a general principle to set the specialists at work picking serious flaws in the operation of the program, but it is a general tendency today among the right wing of the progressives.

The main advantages of this program are that it necessitates the elimination of much useless detail and that it allows the points of view of history and of geography to supplement one another. The disadvantage appears when the attempt is made to decide on what principle the units are to follow one another. If the order of historical development is followed, the historians are glad to include much geographical material. The geographers, however, have been most outspoken in their criticism of the kind of geography that lends itself to such treatment. On the other hand, if a regional plan is followed, the time element in history must suffer; and, when a regional treatment immediately follows a historical treatment, there is grave danger of reading the present back into the past. Whether children so trained will be in possession of the basic points of view and methods of work of both history and geography, or either, or neither, only the future can tell. Whether this plan is superior to two separate subjects is also "on the knees of the gods."

THREADS OF INSTITUTIONAL DEVELOPMENT

A third curriculum trend is found among the center of the progressives and the left wing of the traditionalists. This tendency is to follow separate *threads* of development from the earliest beginnings to the present. This trend is growing at a tremendous rate, if one is

to judge partly by the recent literature for children. To find a recent book for middle-grade children which does not treat of the development of transportation is somewhat of a novelty. Besides transportation, other threads are communication, lighting, records, time-telling, navigation, architecture, number systems, and the like. The values are obvious. All these institutions are of fundamental significance to society. They are concrete and therefore have reality in the minds of children. There can be no doubt that they should form an important part of every curriculum in the social studies.

The question is whether such materials should be organized as separate threads, to be studied one after another. If such a plan is followed in the middle grades, there can be no unified view of man's great adventure on the earth, little integration of ideas, and little coherence or cumulativeness of experience. The "old" chronological history was criticized because it showed no connection between events but presented promiscuously all those which took place at the same time. The newer thread organization makes exactly the opposite error; it follows one line of thought through logically, but it can achieve little integration of the threads. It isolates vertically, as the other isolated horizontally. In fact, it is repeating the history of the topical method.

Another disadvantage is that children do not see the broad background out of which advances in each thread came. For example, in studying almost any scientific trend, they are told over and over that a people named the Greeks made great contributions. They know little about the Greeks and do not understand why these people made so many advances. The historian immediately interjects that a people's discoveries and inventions can be understood only as a manifestation of the genius of that people and that any people can be understood only in the light of their history. The thread theory of curriculum construction does not, and because of its nature cannot, give such an understanding.

Proponents of the plan claim that it is more "functional" than other plans and that such materials represent "real-life situations." Surely in real life a person may be confronted with the fact of a bridge or a boat or a road or a record, but to call the complete history of the making of bridges, boats, roads, or records more functional

than a unit on "The Greeks Gave the World the Ideal of Freedom" or "How the United States Became a Great Industrial Nation" is a mere statement of opinion.

The fact that many books have been, and properly should be, written as threads does not mean that the materials of which they treat should be included in the curriculum as identical threads. American education, however, has been so accustomed to "following the book" that the appearance of these valuable materials in published form has been followed by their inclusion seriatim in the curriculum. The remedy for such a situation is obvious.

THE CURRICULUM OF SEPARATE SUBJECTS

The last of the four curriculum trends to be mentioned is the separate-subject plan. It has come a long way from its defensive, apologetic position of a few years back. It has eliminated much of its former useless detail, though much more should still be deleted. It has added material of social value, though much more still needs to be added. It has organized its materials in thought units, though much more study should be given to the development of units from one school level to the next. There is coming about a better balance between units. New viewpoints and new materials of the subjects themselves are slowly finding their way into textbooks. Teachers are at last beginning to learn the methods of work of subjects which, they thought, they had been teaching for many years. The educational world is recognizing that the disciplines themselves have been affected by the same forces for reorganization and re-evaluation which have produced the other trends mentioned.

The great value of instruction in separate subjects is the orderly, systematic, cumulative development of points of view, methods of work, and study habits. Since the separate-subject plan has taken from the activity movement the values of direct, firsthand experience, the subjects are appealing to children's interests much more than formerly. Since the fusion or integration movement has shown the value of seeing all sides of a question, history, geography, anthropology, etc., are used to supplement one another in the separate-subject curriculum. Since the threads of social institutions have been much emphasized, these worth-while materials are being in-

cluded in the separate subjects in the place of much military and political history.

Separate subjects, however, still labor under the disadvantages of isolation, and they do not reinforce one another as they should. All too often the relationships are lost, or administrators go to the opposite extreme and insist on a correlation so perfect that it is forced and necessitates the substitution of unimportant details for important generalizations just because they can be tied up with other subjects.

DIFFERENTIATION OF SUBJECT MATTER FOR THE MIDDLE GRADES AND THE JUNIOR HIGH SCHOOL

Up to this point consideration has been given mainly to the units in curriculum construction. However, if the entire curriculum from the kindergarten to the college is to be examined, consideration must also be given to the question of child development. Such questions as the following must be grappled with: How should the social studies for the middle grades differ from the social studies for the junior high school? How should the social studies in the junior high school differ from those in the senior high school? Such questions cannot be answered by generalities. They can be answered only by the most meticulous analysis of the elements involved and by the application of the findings of scientific investigations. The review which follows considers only one small segment of the problem—the respects in which history for the middle grades should differ from history for the junior high school.

Years ago Henry Johnson indicated his belief, based on his rich experience, that history for young children should consist mainly of the narrative and descriptive elements.[1] Studies of children's interests and experiments in visual education have confirmed his views. Tests of the actual accomplishments of children have corroborated their practicability. One can, with a good deal of assurance of its psychological soundness, state the principle that history for middle-grade children should develop the "ability to comprehend a coherent narrative"[2] of the action comprising a unit movement and

[1] Henry Johnson, *Teaching of History in Elementary and Secondary Schools*, pp. 44–45, 48, 49. New York: Macmillan Co., 1915.

[2] Charles Hubbard Judd, *Psychology of High-School Subjects*, p. 456. Boston: Ginn & Co., 1915.

the ability to visualize clearly the overt aspects of the historical scene.

Thus, the general groundwork is laid, and, at the same time, the limitations are indicated. This groundwork furnishes an adequate foundation for widening children's experiences and clarifying their concepts. What great progress could be made later if all middle-grade children really knew in rough outlines the main story of what had happened in the most significant unit movements!

Recent studies have shown that it is an entirely attainable purpose to begin to develop certain concepts imbedded in vocabulary terms, though development will continue throughout life. The previous experiential background is evident as the chief conditioning factor, followed closely by ability to get thought from the printed page. Programs which are now being administered will indicate with considerable accuracy within a few years even such specific matters as the general lists of terms which can be understood at each level in connection with given topics.

The geographers deserve the credit for having initiated a practicable program to develop specific skills. Many of the same skills are needed in history—picture interpretation, simple map interpretation, and simple map-making. Middle-grade teachers all over the country are now engaged in specific efforts to develop these skills, and within a few years some objective data as to results should also be procurable here.

For decades teachers of history have spoken much about the values of teaching the use of books. Until schools were equipped with something else than the textbooks in each subject, little was done. Equipment over the country as a whole is still deplorably inadequate. In the few places where books are supplied, the books are all too likely to be found in the senior high school library, to a lesser extent in the junior high school library, and to a still smaller extent in the libraries for the middle grades. Nevertheless, a few school systems now provide materials for a wide reading program in middle-grade social studies, and teachers are being supplied with definite helps toward teaching and testing knowledge of how to use the index, the table of contents, the topic headings, etc.

In recent years the development of children's powers of reasoning

has been studied extensively as a part of the general study of mental development. The findings have had a marked influence on teachers' demands or expectations in the middle grades. The minimum expectation now is that the child be able "to comprehend a coherent narrative of successive events"[1] in a unit movement. As soon as this ability is satisfactorily developed, exercises can be provided in cause-and-effect reasoning, comparison, evaluation, drawing inferences, analysis and synthesis, and generalizations.

Few objective data are yet available on the general success of middle-grade children with such exercises. Tests administered on a large scale have been uniformly disappointing. In fact, the Commission on the Social Studies of the American Historical Association was so discouraged over its own test results in matters of reasoning that it drew conclusions which have brought forth widespread protests from the field. It is always dangerous to assume that any children anywhere can be given a particular test and that, if they react unfavorably, valid conclusions may be drawn about the ability of children of that age or grade level in general. Obviously, a certain minimum of uniformity in curriculum offerings must precede any uniform test. For example, if children do not know who Magellan was or what he did, no amount of reasoning on their part can discover why he followed the particular course which he did along the eastern coast of South America. Basing the reasoning test on a short printed paragraph giving the factual background has not proved satisfactory. Even a longer discussion is very different from a background which has grown out of a meaningful context and possesses rich associations. Moreover, there is a technique of reasoning to which children must be introduced; it is not a full-grown acquisition suddenly bestowed. That children chosen by random sampling do not use it proves nothing beyond that fact. Nothing is proved about what they might have done had they ever been given an inkling of the possibilities of letting their minds play with ideas.

In single school systems, however, and by scattered teachers in other systems, satisfactory beginnings are being made in the testing of reasoning in the middle grades by various devices—"new-type" or objective tests alone and in combination with greater or lesser

[1] Charles Hubbard Judd, *op. cit.*, p. 456.

amounts of paragraph-writing. The results vary widely, not only because of individual differences among teachers, but also because of individual differences in rate and quality of maturing of children. Teachers in the middle grades are not attempting to force this maturing process, but they are attempting to provide sufficient exercise in different forms of reasoning to stretch the powers of each child. Within a few years statistics should be available that will give a picture of the rate and the quality of progress in reasoning in general from the fourth through the sixth grade, and of particular types of reasoning as well.

This account presents the general psychological background of what is being attempted in history in the middle grades. Inarticulate and vague as the program may be, it has nevertheless resulted in a considerable change in the offerings at the middle-grade level. Two decades ago middle-grade materials were either detailed biographies or skeleton summaries of the same kinds of materials that were used in the high schools and the upper grades. Today the materials for the middle grades are almost universally presented as meaningful, connected wholes. Appreciation of the lack of basis in children's experience has resulted in the general deletion of the study of strictly governmental problems, such as elections, and of the organization or machinery type of government, such as the makeup of boards and commissions. A growing realization of the imperfect character of the powers of abstract thinking possessed by middle-grade children has resulted in the deletion of entire topics, such as currency, banking, the tariff, and constitutional interpretation. Strictly political and military history has been subordinated to narrative of action and pictures of social life.

At the secondary level much more work has been done and much more has been written, but teachers suffer from this embarrassment of riches in that the materials are diverse and widely scattered. There is need of bringing the findings together and applying them to specific problems. For example, the objective of "training for historical research," it has been generally agreed, is outside the public-school purpose. When teachers or curriculum-workers, however, seek guidance on such specific matters as whether junior high school

pupils in American history can profit from a study of the currency, they find little help.

Workers in the social-studies field could do nothing that would be of more direct assistance to teachers and pupils than to turn their attention to this problem of defining, delimiting, and characterizing the particular function of the social studies at each level of development.

CO-ORDINATING THE EFFORTS OF ALL WORKERS

In closing, it seems worth while to point out that the services of the university specialists could be utilized to a much greater extent than they have been in the past. Curriculum construction for the public schools has been considered, for the most part, the special province of workers in education, but the product has suffered because the matter has been left to one department. Within the last decade university professors have made tremendous improvements in their own instruction. Interpretation has been stressed. Points of view have been emphasized. Materials have been made more meaningful. This same change in emphasis could work a revolution if it were applied to the same subjects in the public schools.

Teachers have recognized the desirability of drawing generalizations and of making interpretations, but they have lacked the deep understanding of the subjects out of which such interpretations can arise. In the curriculum-building of the future, therefore, a co-ordination of forces among classroom teachers, professors of education, and subject-matter experts is urgently needed. When such a co-ordination of forces makes a concerted attack upon all fronts, there is hope that many of the objectives will be achieved.

THE FIRST STEP IN REMEDIAL READING

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It is invariably found that a non-reader or a poor reader has an inadequate sight vocabulary. Yet the common words which constantly recur in reading should certainly be recognized immediately if the child is to devote his attention to the more difficult, less frequent words. The first step, therefore, in remedial reading is to teach the child to recognize instantly the basic sight vocabulary. A previous article listed the 220 words which make up 50 per cent or more of the reading matter used in school.[1] The great importance of these words is shown by Table I, which gives the percentages that the basic sight words are of the total number of running words in school textbooks in four subjects.

This small number of words is of such wide usefulness largely because the list includes no nouns but is made up of the prepositions, conjunctions, adjectives, adverbs, and verbs which form the framework of expression and communication. Nouns cannot be of general use because the change from one school subject to another and from one topic in a subject to another topic necessarily means a change of nouns. The table shows a gradual change in the percentage of the basic words used from one grade to another. This change is largely due to the fact that the earlier books use more of the common adjectives and verbs.

The first step in remedial reading, the teaching of the basic sight words, can be done with surprising ease if special cards prepared for the purpose are used.[2] An illustration is a recent remedial project carried on with fourth-grade children. Of the 300 children in the grade, a fourth (about 75) knew no more than 194 of the list of 220 words. The number of words known by these 75 pupils ranged from

[1] E. W. Dolch, "A Basic Sight Vocabulary," *Elementary School Journal*, XXXVI (February, 1936), 456–60.

[2] Sets of these cards may be secured from the author.

194 down to only 40. The children scoring below 195 were selected for remedial work because that figure is about the average number of these words known by the children at the end of Grade III (the good readers of Grade II are found to know all the 220). The number of words known as sight words by each child was tested with a pack of cards, each card bearing one of the words printed in primer type. The cards were placed directly before the child, and he was told that the game was to call the words, giving them only "one look." He was assured that he would know all the words if he took

TABLE I

PERCENTAGE THAT THE BASIC SIGHT VOCABULARY IS OF RUNNING WORDS IN SCHOOL TEXTBOOKS IN FOUR SUBJECTS*

Subject of Textbooks	Number of Books	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI
Reading	4	70	66	65	61	59	59
Arithmetic	2	.....	.....	62	63	57	57
Geography	2	.....	.....	.....	60	59	54
History	2	.....	.....	.....	57	53	52

* Based on a thousand-word sampling of each book, including inflected forms of the basic sight words in which the sight word appears unchanged.

his time but that he was to help pick out the "one-look" words from the "two-look" words. The children liked the game. The tester sat at the child's right hand and took the cards from the top of the pack at a steady rate of from one to two cards per second. Those which the child called correctly were placed in one pile and those which he missed in another pile. Thus, the basic sight words that the child actually knew by sight were separated from those that he was to learn.

From this start each child was to make progress toward instant recognition of the whole basic sight vocabulary. Each child had a manila envelope containing his individual pack of cards and bearing on the outside a series of numbers, one for each practice period. In the first space was placed the number showing how many words the child had to learn and after the others the daily record of the number of words still unknown. Every day the cards were shuffled, and

the child went over them with the aid of a "helper," a pupil who was a good reader chosen by the teacher to fit the particular case. Sometimes this practice was carried on in the classroom while the rest of the group worked at something else, and sometimes it was done in a separate room. The child who was the "player" read each card and handed it to the "helper." If the player was right, the helper put the card on the desk; if not, he kept the card in his hand. If the player did not know the word or if he miscalled it, the helper pronounced the right word, and the player repeated it after him. Both were eager to reduce the number of unknown words, or to "overcome the enemies," as some of them put it. When a child could call all the words correctly, he repeated the performance for the next two days to prove that he could remember them all. A final individual check was made by the tester. The few children who, at the beginning, knew less than half the 220 words were not given all the cards, but only those that they knew and a few more that were especially taught. Their packs gradually grew as new words were steadily added.

The record of what these children accomplished in from three to four weeks shows that children of fourth-grade maturity can, in a remarkably short time, correct the fundamental defect of lack of sight vocabulary. The figures in Table II (for sixty-five children instead of the original seventy-five, ten having been eliminated because of absence, removals, etc.) are those secured from individual testing by an experienced tester, not the results secured by the children themselves. They show that in all but a handful of cases this group of poor readers, after the special work, recognized instantly practically all the 220 basic sight words. A large factor in this success was the great interest of the children in reducing the number of unknown words to zero. They had a definite job that they were sure they could do, and they did it. In some schools a third of the room was working on this project, and the other pupils were as interested as were the "players" in winning out. A few extremely poor readers showed unwillingness to co-operate until given individual attention by the teacher or the tester. A few helpers had to be changed because of personal feeling.

A check on the results of this first step in remedial work was made

by the use of a standard test. It is understood, of course, that no single reading test could directly measure the result of increasing the

TABLE II

BASIC SIGHT WORDS KNOWN BY SIXTY-FIVE PUPILS IN FOURTH-GRADE REMEDIAL-READING GROUP BEFORE AND AFTER FOUR WEEKS OF SPECIAL WORK

NUMBER OF KNOWN WORDS	NUMBER OF CHILDREN KNOWING WORDS	
	Before Special Work	After Special Work
220	.....	50
215–19	.....	8
210–14	.....	3
205–9	.....	2
200–204	.....	.....
195–99	.....	2
190–94	7	.....
185–89	6	.....
180–84	10	.....
175–79	6	.....
170–74	3	.....
165–69	3	.....
160–64	4	.....
155–59	6	.....
150–54	3	.....
145–49	3	.....
140–44	2	.....
135–39	1	.....
130–34	.....	.....
125–29	.....	.....
120–24	5	.....
115–19	1	.....
110–14	.....	.....
105–9	1	.....
100–104	.....	.....
95–99	2	.....
90–94	1	.....
40	1	.....
Total	65	65

sight vocabulary, but it was felt that such a test should give some indication of easier reading or greater reading ability. For this purpose the Gates Silent Reading Tests, Type B (Reading To Predict the Outcome of Given Events), was chosen because it comes closest to ordinary straightforward "reading for the story" such as average

fourth-grade pupils are expected to be able to do. The results showed an average gain of two months in reading grade after the one month spent on the basic sight words, together with an increase in average correctness. These figures were encouraging, though they could not be taken as positive proof because of the large probable error.

The benefit to the poor readers and to the other pupils in the rooms was, however, decidedly more than can be shown by any standard test. The self-respect and the self-confidence of the poor readers increased remarkably. Their whole attitude toward school was improved. They actually tried to read their textbooks in geography and other subjects. It cannot be said that this improvement was due solely to the learning of the basic sight words, since at the same time the pupils had been given easy books to read in their room libraries. Knowing the basic sight words, however, undoubtedly enabled them to read those easy books more readily, for the 220 words made up 60 per cent or more of the running words of these books. The only cost was the cost of the cards bearing the sight words, and the only derangement of schedule was the setting-up of the practice period for players and helpers and a twenty-minute library period.

This project has shown two very important things: first, that sight-vocabulary deficiency can be corrected in a short space of time and, second, that the correction can be made with a large group of children under normal class conditions. Most work in remedial reading has been individual, and individual attention can never reach the great number of children who are in need. It can be given only to the genuine problem cases. Most poor readers, however, have simply failed to make the usual steps in reading progress when the rest of the class made them. Methods must be devised whereby they can make these steps later. The use of basic sight words on cards, as illustrated in this project, will permit a group of any size to make the first step in catching up with their fellows at any time that a school or a teacher may decide to bring poor readers up to grade.

THE PICTURE CHOICES OF PRIMARY-GRADE CHILDREN

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An examination of books suitable for young children reveals an extensive use of color, wide variety of illustrative materials, and marked differences in the technique of picture-making. The use of colors and of illustrations makes the primary-grade book of today very different from its predecessor of a generation ago.

There is no agreement on the best type of illustrative technique. The choice of illustrations is probably determined by the personal ideas of the artist, the publisher's ideas of what is suitable, and the cost of reproducing the pictures. In many books for young readers half the space is devoted to illustrations. If large proportions of the space in books are to be given over to illustrations, the cost of which appreciably conditions the price of the books, it is proper to inquire which is the most suitable illustrative technique. If illustrations are to serve a useful purpose, they must appeal to children, and no one is so well qualified to state the preferences of children as they are themselves. This study was made for the purpose of determining which type of illustrative technique is preferred by primary-grade children.

The investigator chose twenty-five photographs judged to be of interest to children in the primary grades because of the content of the pictures. It was decided to use pictures which could be grouped, on the basis of their content, into the five following classifications: children in action, children and their pets, children and their toys, adult activities, and animals. Five pictures were selected in each classification.

Each photograph was copied as a line drawing, a wash drawing, a black-and-white illustration, a full-color reproduction using three primary colors, an illustration in which red was the predominant color, and an illustration in which blue was the predominant color.

The red and the blue used in the full-color reproduction were the same as those used when one color was predominant. The red and the blue were of the intense, crude variety which children are thought to prefer. Using the same subject matter in each technique made possible a choice which was not influenced by the content of the picture. Each set of seven pictures with the same content but in the different techniques was mounted on a card twenty-four by thirty-six inches in size. The order in which the pictures were mounted was alternated so that the same technique did not appear in the same position on all the cards. Blanks were prepared on which to record the children's choices. Each blank also had spaces in which could be recorded the name of the child, his grade, chronological age, mental age, and intelligence quotient.

One hundred children in each of the first three grades were asked to indicate which technique in each set of pictures was preferred. The children were tested individually. The examiner said to the child: "Here are some pictures I want to show you. On each card are several pictures of the same people or things. Each group of pictures is alike except that they are made in a different way. You are to look at each group of pictures and choose the one you like best." The sets of pictures were shown to the children one at a time, and the choices were recorded. The data thus gathered are presented in the accompanying tables.

The choices of the children are given in Table I. Both the number of choices and the percentages are shown. The greatest possible number of choices for the 300 children is 7,500. Table I shows that the full-color picture was first choice in Grade I, receiving over half the total number of choices; the picture in which red was the predominant color was second, with over 18 per cent of the choices; the technique in which blue was the predominant color was third, with over 12 per cent of the total; and the photograph was fourth, with about 7 per cent of the choices. The three other techniques received such small percentages of choices that they may be considered unimportant. In Grade II the full-color technique received more than three-fifths of the choices, with the other techniques following in the same order as in Grade I. The third-grade children registered a lower percentage of choices for the full-color technique than did the children in Grade I or II. The photograph received second choice in

Grade III, having nearly a fifth of the total number of choices. For the three hundred children together, more than 55 per cent of the choices were for the full-color reproduction. This finding is in accord with the data from another study.[1] Second choice was given to the technique which featured red. The increase in the percentage of choices for the photograph registered by the third-grade children placed it in third place in the totals. The technique in which blue predominated was the fourth choice of the entire group. The remaining three techniques received only about 7 per cent of the total number of choices. The small favor shown these techniques bears out the results of previous research.[2] The preference for the photograph grew as the children were in school longer, the percentage increasing from less than 7 in Grade I to more than 10 in Grade II and to nearly 20 in Grade III. In each of the three grades red was preferred to blue. The preferences for both red and blue diminished with increase in the ages of the children. These findings are somewhat at variance with those reported in another study.[3]

TABLE I

NUMBER AND PERCENTAGE OF CHOICES GIVEN TO SEVEN TYPES OF PICTURES BY THREE HUNDRED CHILDREN IN GRADES I–III

Type of Picture	Grade I		Grade II		Grade III		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Full color	1,360	54.4	1,520	60.8	1,301	52.0	4,181	55.7
Red predominant	471	18.8	305	12.2	295	11.8	1,071	14.3
Photograph	172	6.9	257	10.3	487	19.5	916	12.2
Blue predominant	318	12.7	284	11.3	222	8.9	824	11.0
Wash drawing	83	3.3	74	3.0	117	4.7	274	3.7
Line drawing	55	2.2	37	1.5	43	1.7	135	1.8
Black and white	41	1.7	23	0.9	35	1.4	99	1.3
Total	2,500	100.0	2,500	100.0	2,500	100.0	7,500	100.0

[1] Bonnie E. Mellinger, *Children's Interests in Pictures.* Teachers College Contributions to Education, No. 516. New York: Teachers College, Columbia University, 1932.

[2] G. LaVerne Freeman and Ruth Sunderlin Freeman, *The Child and His Picture Book*, pp. 43–46. Chicago: Northwestern University Press, 1933.

[3] Florence Eilan Bamberger, *The Effect of the Physical Make-up of a Book upon Children's Selection.* Johns Hopkins University Studies in Education, No. 4. Baltimore: Johns Hopkins Press, 1922.

Table II shows the choices of the two sexes in each grade. Both sexes in each grade gave the largest percentage of choices to the full-color reproduction. The third-grade boys were the only group whose

TABLE II

NUMBER AND PERCENTAGE OF CHOICES GIVEN TO EACH OF SEVEN TYPES OF PICTURES BY BOYS AND GIRLS IN GRADES I–III

Type of Picture	Grade I		Grade II		Grade III	
	Boys (63)	Girls (37)	Boys (49)	Girls (51)	Boys (52)	Girls (48)
Full color:						
Number of choices	823	541	688	836	616	677
Percentage of choices	52.3	58.5	56.2	65.6	47.4	56.4
Rank of type	1	1	1	1	1	1
Red predominant:						
Number of choices	307	164	155	150	153	142
Percentage of choices	19.5	17.7	12.6	11.8	11.8	11.8
Rank of type	2	2	3	2	3	3
Blue predominant:						
Number of choices	202	119	162	121	128	92
Percentage of choices	12.8	12.9	13.2	9.5	9.8	7.7
Rank of type	3	3	2	3	4	4
Photograph:						
Number of choices	131	39	153	101	304	188
Percentage of choices	8.3	4.2	12.5	7.9	23.4	15.7
Rank of type	4	4	4	4	2	2
Wash drawing:						
Number of choices	60	23	39	35	63	54
Percentage of choices	3.8	2.5	3.2	2.7	4.8	4.5
Rank of type	5	6	5	5	5	5
Line drawing:						
Number of choices	30	24	19	18	16	28
Percentage of choices	1.9	2.6	1.6	1.4	1.2	2.3
Rank of type	6	5	6	6	7	6
Black and white:						
Number of choices	22	15	9	14	20	19
Percentage of choices	1.4	1.6	0.7	1.1	1.5	1.6
Rank of type	7	7	7	7	6	7

choices for this technique were less than 50 per cent of the total. The percentages of girls who selected the full-color picture were larger than the corresponding percentages of boys. The photograph was more popular with boys than with girls, and the differences in each grade were significant. There was a tendency for the boys to prefer

red and blue to a greater extent than the girls, but the differences were slight.

TABLE III

NUMBER AND PERCENTAGE OF CHOICES GIVEN TO EACH OF SEVEN TYPES OF PICTURES BY 300 CHILDREN IN NINE INTELLIGENCE-QUOTIENT GROUPS

Type of Picture	Intelligence-Quotient Group								
	Over 115 (15)	111–15 (52)	106–10 (59)	101–5 (76)	96–100 (32)	91–95 (27)	86–90 (17)	81–85 (11)	80 and Below (11)
Full color:									
Number of choices	252	781	880	1,077	456	270	188	113	164
Percentage of choices	67.2	60.1	59.7	56.7	57.0	40.0	44.2	41.1	59.6
Rank of type	1	1	1	1	1	1	1	1	1
Red predominant:									
Number of choices	33	204	174	282	114	102	84	58	20
Percentage of choices	8.8	15.7	11.8	14.8	14.2	15.1	19.8	21.1	7.3
Rank of type	4	2	2	2	2.5	3.5	2	2	3
Photograph:									
Number of choices	43	89	169	226	70	154	54	52	59
Percentage of choices	11.4	6.8	11.5	11.9	8.8	22.8	12.7	18.9	21.5
Rank of type	2	4	3	3	4	2	3	3	2
Blue predominant:									
Number of choices	37	131	147	188	114	102	53	38	14
Percentage of choices	9.8	10.1	10.0	9.9	14.2	15.1	12.5	13.8	5.1
Rank of type	3	3	4	4	2.5	3.5	4	4	4
Wash drawing:									
Number of choices	6	51	48	60	31	29	33	6	10
Percentage of choices	1.7	3.9	3.2	3.2	3.9	4.3	7.8	2.2	3.6
Rank of type	5	5	5	5	5	5	5	6	6
Line drawing:									
Number of choices	2	23	28	36	7	15	10	7	7
Percentage of choices	0.5	1.8	1.9	1.9	0.9	2.2	2.4	2.5	2.5
Rank of type	6.5	6	7	6	7	6	6	5	5
Black and white:									
Number of choices	2	21	29	31	8	3	3	1	1
Percentage of choices	0.5	1.6	2.0	1.6	1.0	0.4	0.7	0.4	0.4
Rank of type	6.5	7	6	7	6	7	7	7	7

In Table III the choices of the three hundred children are grouped according to the intelligence quotients of the pupils tested without reference to the grade in which they were classified. This table indicates that the children of lower intelligence tended to choose pictures

in which red or blue was the predominant color more frequently than did children of higher intelligence. The percentage of choices for these techniques was considerably higher in the groups with intelligence quotients from 81 to 100 than in the groups with intelligence quotients from 101 to over 115. The choices of the group of children with intelligence quotients of 80 and below were an exception to this statement, but these children were doubtless an atypical group. The children with higher intelligence favored the full-color reproduction more frequently than did children with lower intelligence although the lowest intelligence-quotient group is again an exception.

In Table IV the responses are grouped according to the mental ages of the children. These data indicate that the choices for the photograph tended to increase as mental age increased. This trend is shown very definitely if the responses of the few children with mental ages of below six and over ten are discarded. The trend of choices for the full-color reproduction is not so consistent, especially if the data for the nine children ten to eleven years old are omitted. However, the percentages of choices for the full-color reproduction given by children with mental ages of seven or more were higher than the corresponding percentages for children with mental ages of less than seven. The percentage of choices for the technique in which red was predominant decreased as mental age increased. This trend is particularly apparent if the groups at the extremes, where there are relatively few children, are discarded. The most outstanding difference was the decrease in popularity, beginning with the seventh year, of the technique which featured red. The trend in the choices for the technique in which blue was predominant was in the same direction, but the differences were less important.

In order to determine whether the content of the picture made any differences in the choice of technique, the writer classified the responses of twenty-five children, selected at random from each grade, according to the groups of pictures for which the choices were made. The data supplied by these seventy-five children are presented in Table V. For the most part, the choices of techniques are distributed among the five groups in about the same proportions as those in Table I, which gives the totals of all choices. In the case of the two

TABLE IV

NUMBER AND PERCENTAGE OF CHOICES GIVEN TO EACH OF SEVEN TYPES OF PICTURES BY 300 CHILDREN IN NINE MENTAL-AGE GROUPS

TYPE OF PICTURE	MENTAL-AGE GROUP										
	10.6–11.0 (2)	10.0–10.5 (7)	9.6–9.11 (28)	9.0–9.5 (39)	8.6–8.11 (26)	8.0–8.5 (35)	7.6–7.11 (52)	7.0–7.5 (48)	6.6–6.11 (41)	6.0–6.5 (19)	Below 6.0 (3)
Full color:											
Number of choices	40	124	403	514	358	515	757	695	516	224	35
Percentage of choices	80.0	70.9	57.5	52.8	55.2	58.9	58.2	57.9	50.3	47.2	46.6
Rank of type	1	1	1	1	1	1	1	1	1	1	1
Red predominant:											
Number of choices	4	31	72	98	84	128	182	127	201	127	17
Percentage of choices	8.0	17.7	10.3	10.1	12.9	14.6	14.0	10.6	19.6	26.7	22.6
Rank of type	2	2	3	4	3	2	2	4	2	2	2
Photograph:											
Number of choices	3	7	117	201	108	83	138	153	67	30	9
Percentage of choices	6.0	4.0	16.7	20.5	16.5	9.5	10.6	12.7	6.5	6.3	12.0
Rank of type	3.5	4	2	2	2	3.5	4	2	4	4	3
Blue predominant:											
Number of choices	3	9	62	100	45	83	161	134	157	64	6
Percentage of choices	6.0	5.1	8.9	10.3	6.9	9.5	12.5	11.3	15.3	13.5	8.0
Rank of type	3.5	3	4	3	5	3.5	3	3	3	3	4.5
Wash drawing:											
Number of choices	0	3	24	39	45	30	33	49	28	17	6
Percentage of choices	0.0	1.7	3.4	4.0	6.9	3.4	2.5	4.1	2.7	3.6	8.0
Rank of type	.....	5	5	5	4	5	5	5	6	5	4.5
Line drawing:											
Number of choices	0	1	6	16	3	24	20	29	28	6	2
Percentage of choices	0.0	0.6	0.9	1.6	0.5	2.7	1.5	2.4	2.7	1.3	2.7
Rank of type	.....	6	7	6	7	6	6	6	6	7	6
Black and white:											
Number of choices	0	0	16	7	7	12	9	15	28	7	0
Percentage of choices	0.0	0.0	2.2	0.7	1.1	1.4	0.5	0.9	2.7	1.5	0.0
Rank of type	.....	.....	6	7	6	7	7	7	6	6	.....

groups of pictures having as their content children and their toys and adult activities, the percentages of choices for the technique in

TABLE V

DISTRIBUTION, ACCORDING TO CONTENT OF PICTURE, OF CHOICES GIVEN TO PICTURES OF SEVEN TYPES BY SEVENTY-FIVE CHILDREN SELECTED AT RANDOM

TYPE OF PICTURE	CONTENT OF PICTURE				
	Children in Action	Children and Toys	Children and Pets	Adult Activities	Animals
Full color:					
Number of choices	198	255	199	237	209
Percentage of choices	52.8	68.0	53.1	63.2	55.7
Rank of type	1	1	1	1	1
Red predominant:					
Number of choices	68	45	69	45	56
Percentage of choices	18.1	12.0	18.4	12.0	14.9
Rank of type	2	2	2	2.5	2
Photograph:					
Number of choices	40	42	40	45	39
Percentage of choices	10.7	11.2	10.7	12.0	10.4
Rank of type	4	3	4	2.5	3.5
Blue predominant:					
Number of choices	49	22	50	31	5
Percentage of choices	13.1	5.9	13.3	8.3	1.3
Rank of type	3	4	3	4	7
Wash drawing:					
Number of choices	7	4	7	8	16
Percentage of choices	1.9	1.1	1.9	2.1	4.3
Rank of type	5.5	6	5	5	5
Line drawing:					
Number of choices	7	6	5	6	11
Percentage of choices	1.9	1.6	1.3	1.6	2.9
Rank of type	5.5	5	6.5	6	6
Black and white:					
Number of choices	6	1	5	3	39
Percentage of choices	1.6	0.3	1.3	0.8	10.4
Rank of type	7	7	6.5	7	3.5

which red was predominant are smaller than the percentages of the total given in Table I. The size of the difference and the small part played by this technique make the matter of little importance in this study. Attention is called to the choices registered for the techniques

in pictures of animals: over 10 per cent were given to the technique which used black and white. In the totals in Table I this technique received but 1.3 per cent of the choices. This distribution is the only instance where the black-and-white technique received a significant percentage of the total number of choices.

To find whether the children's choices were consistent and to secure a check on the validity of the data, the writer after two months retested fifty children selected at random from Grades I and II. The results of the retest are shown in Table VI. A comparison of the

TABLE VI

NUMBER AND PERCENTAGE OF CHOICES GIVEN ON A RETEST TO EACH OF SEVEN TYPES OF PICTURES BY FIFTY CHILDREN IN GRADES I AND II

Type of Picture	Number of Choices	Percentage of Choices
Full color	895	71.6
Photograph	117	9.4
Red predominant	98	7.8
Blue predominant	94	7.5
Wash drawing	29	2.3
Line drawing	9	0.7
Black and white	8	0.6

data in Tables I and VI indicates that the children's choices were not entirely consistent. There was an increase of about 16 in the percentage of pupils registering choices for the full-color technique. In the first test the order of choices gave first rank to the full-color picture, second to the picture with red predominant, third to the photograph, and fourth to the technique in which blue was predominant. In the retest the photograph and the picture with red predominant exchanged places. It should be borne in mind that the retest included only one-sixth of the children and these only in Grades I and II. The major findings of the original test were confirmed by the retest.

CONCLUSIONS

On the basis of the data presented, the following conclusions may be drawn: (1) Full-color reproductions received more than half the total number of choices. (2) The technique in which red was pre-

dominant, the photograph, and the technique featuring blue were next highest in favor. (3) The wash drawing, the line drawing, and the black-and-white picture received insignificant percentages of the choices. (4) The preferences for the photograph increased in the higher grades. (5) The boys registered more preferences for the photograph than did the girls. (6) The preferences for the photograph tended to increase as mental age increased. (7) Data not given here indicate that the children chronologically older registered more choices for the photograph. (8) There was a tendency for children of the lower intelligence groups to choose the photograph more frequently than did children of the higher groups. (9) In all three grades red was preferred to blue. (10) There was a tendency for the boys to choose red and blue more frequently than the girls, but the differences were slight. (11) There was a tendency for the children with lower intelligence to choose red and blue. (12) The percentage of choices for red and blue tended to decrease as mental age increased. (13) Data not given here indicate that the children six years old chronologically chose red and blue more frequently than the children of any other age group except the children in the age group of 10.0–10.5. (14) The children with mental ages of seven or more years chose full-color reproductions more frequently than did children with mental ages of less than seven years. (15) The girls preferred full-color pictures more frequently than the boys. (16) There was a tendency for the children with higher intelligence to prefer the full-color reproduction.

THE DIRECT AND INDIRECT METHODS OF TEACHING THE ADDITION COMBINATIONS

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This article is a report of an experiment dealing with the problem of guiding learning activity in addition. More specifically, the problem was to determine whether the addition combinations should be taught directly or indirectly, that is, whether progress is more rapid when the one hundred combinations are taught in isolation from more complex column addition or when they are taught incidentally in connection therewith.

The term "direct" will be used to refer to practice exercises involving combinations of two digits, such as $\begin{array}{r} 3 \\ \underline{4} \end{array}$ and $\begin{array}{r} 9 \\ \underline{8} \end{array}$, designed to result in the child's responding automatically with the sums of such combinations. The term "indirect" will be used to mean practice on the addition combinations within examples, such as $\begin{array}{r} 93 \\ \underline{26} \end{array}$, before the combinations have been separately mastered. It seems to be generally believed by teachers and textbook-writers that the number combinations are best taught in isolation, or directly.

METHOD OF INVESTIGATION

The experiment was conducted by using comparable groups in the public schools of Tipton, Oklahoma, with pupils in the first semester of Grade II. Later it was repeated in the second semester of Grade I. The pupils of the two grades were taught in different rooms by different teachers. Comparable groups in the same grade were taught in different rooms by the same teacher. None of the pupils had previously received any formal training by either of the two methods employed.

Organization of comparable groups.—The factors of chronological age, general intelligence, initial knowledge of complex addition, and initial knowledge of the one hundred addition combinations were selected as the bases for organizing the pupils into groups of equal ability. Since it was found impossible to match the pupils simultaneously and satisfactorily in all the factors mentioned, it seemed best to match them separately in accordance with two of the factors at a time. The first method of matching was accordingly based on chronological age and intelligence; the second, on the two factors representing initial achievement in addition.

Chronological age and intelligence score on the Otis Group Intelligence Scale, Primary Examination, were obtained for each pupil from the school records. Initial knowledge of complex addition was determined by the Buswell-John addition test.[1] Initial knowledge of the addition combinations was determined by a test consisting of these combinations. Rate and accuracy were considered in both addition tests. In Grade I the Courtis Standard Research Test, Series A, consisting of Test I, Copying Figures, and Test II, Addition, was used to determine ability in addition in relation to the rate of writing numbers.

The pupils in each grade were paired by the first method to form an experimental and a control section. Identical training was given to these comparable groups for one month, at the end of which the pupils were tested in order to check their equality in rate of learning. After the readjustments indicated by this test had been made, two groups of thirty-three pupils each were organized in each grade; that is, thirty-three matched pairs were organized in Grade I and a like number in Grade II. In each grade the one hundred combinations were taught to one group of thirty-three pupils by the direct method and to a parallel group of the same number by the indirect method.

Table I shows the results of the matching by both methods and should be read as follows: In Grade II under the first method of matching, the mean chronological age of the direct group was 90.70 months; of the indirect group, 90.48 months. The difference in mean

[1] G. T. Buswell, with the co-operation of Lenore John, *Diagnostic Studies in Arithmetic*, p. 108. Supplementary Educational Monographs, No. 30. Chicago: Department of Education, University of Chicago, 1926.

TABLE I

Comparison of Groups Receiving Direct Instruction and Groups Receiving Indirect Instruction on Addition Combinations

Group	Mean Chronological Age in Months	Mean Otis Group Intelligence Score	Buswell-John Complex-Addition Test		Initial Combinations Test		Initial Courtis Test, Mean Score	Combination Test at End of Month		Courtis Test at End of Month Mean Score
			Mean Number Right	Mean Number of Minutes	Mean Number Right	Mean Number of Minutes		Mean Number Right	Mean Number of Minutes	
	Grade II—First Method of Matching									
Direct group	90.70	42.67	10.94	38.52	68.73	24.42	.....	77.45	16.21	.....
Indirect group	90.48	43.00	11.36	39.66	68.42	23.64	.....	77.21	16.27	.....
Difference	0.22	0.33	0.42	1.14	0.31	0.78	.....	0.24	0.06	.....
Probable error of difference	1.72	1.25	0.95	2.24	4.23	1.40	.....	2.12	0.89	.....
	Grade II—Second Method of Matching									
Direct group	89.67	42.10	10.86	37.87	.....	.....	.....	76.70	15.87	.....
Indirect group	90.73	42.03	11.03	39.03	.....	.....	.....	77.00	17.20	.....
Difference	1.06	0.07	0.17	1.16	.....	.....	.....	0.30	1.33	.....
Probable error of difference	1.11	1.23	1.01	2.09	.....	.....	.....	3.02	2.47	.....
	Grade I—First Method of Matching									
Direct group	86.55	28.76	5.18	19.63	38.45	18.79	27.91	54.18	13.27	31.48
Indirect group	86.36	28.42	5.00	19.18	39.42	16.64	27.82	56.45	14.09	31.24
Difference	0.19	0.34	0.18	0.45	0.97	2.15	0.09	2.27	0.82	0.24
Probable error of difference	2.03	1.91	0.79	1.40	5.20	1.40	2.16	4.70	1.08	1.93
	Grade I—Second Method of Matching									
Direct group	86.71	28.29	4.64	18.97	.....	.....	.....	53.89	13.90	.....
Indirect group	86.00	28.46	4.14	19.21	.....	.....	.....	52.89	14.23	.....
Difference	0.71	0.17	0.50	0.24	.....	.....	.....	1.00	0.33	.....
Probable error of difference	2.50	1.71	0.77	1.04	.....	.....	.....	5.04	1.38	.....

age was found to be 0.22 ± 1.72, not large enough to be significant. Similarly, compared groups in each grade were shown not to differ significantly in any of the other factors on the basis of which they were matched, either at the beginning of the experiment or at the end of the preliminary month of identical training.

Nature of the instruction.—Each class in the experiment was allotted thirty minutes each day for arithmetic during a semester, or eighteen weeks. The half-hour was divided into shorter periods for seatwork, oral work, or games. In Grade II the group taught by the direct method was assigned the period from 10:00 to 10:30; the group taught by the indirect method, the period from 10:45 to 11:15. In Grade I the order was reversed, any differences caused by the time of day at which the instruction was given being thus controlled.

In each direct group one-half the allotted time was spent in flash-card drill on the combinations, competition in writing sums of combinations, group responses to lists of combinations written on the blackboard, and primary number games. The remaining time was given to the teaching of complex addition. The rate of introducing new skills in column addition was kept identical with that in the parallel indirect group. As new combinations were introduced in a direct group, they were also introduced in the corresponding indirect group, but in the latter they were immediately used in complex addition.

In order that the amount of practice might be kept as nearly equal as possible for compared groups, each set of complex-addition exercises was as carefully planned as the direct-drill exercises with respect to repetition of combinations. The Knight-Behrens difficulty values[1] were used to apportion drill to the different combinations. In order that guessing and incorrect responses might be reduced to a minimum, each child was provided with a key or answer card for the one hundred combinations, which he was permitted to use at all times except during tests. Finally, methods of diagnostic and

[1] Frederic B. Knight and Minnie S. Behrens, *The Learning of the 100 Addition Combinations and the 100 Subtraction Combinations*, pp. 17–20. New York: Longmans, Green & Co., 1928.

remedial work and of graphing individual progress were kept identical for all sections.

As a basis for measuring the relative effectiveness of the two methods of teaching, the three tests used as initial tests were repeated as final tests: the Buswell-John test in complex addition, the test on the one hundred addition combinations, and the Courtis test.

RESULTS

Table II presents the results of the final tests and should be read as follows: In Grade II under the first method of matching, the direct group made a mean final score of 35.21 on the Buswell-John complex-addition test in comparison with a score of 37.91 made by the indirect group. The difference between the two means was 2.70 examples in favor of the indirect group. The direct group used an average of 20.15 minutes for the work, while the indirect group used 20.24 minutes, a difference of 0.09 minutes. The mean gain, or difference between the initial and the final scores, was 24.27 for the direct group and 26.55 for the indirect group. The difference between mean gains was 2.28 in favor of the indirect group. The number of pupils who surpassed the pupils of the opposite group with whom they were matched was 12 for the direct group and 21 for the indirect group. The same information is given for the test on combinations and for the Courtis test.

Relative gains in complex addition.—The final scores of the indirect groups exceeded those of the direct groups in complex addition in all four comparisons.

A more valid comparison may be made by examining the average gain, or improvement, over initial scores. In Grade II under the first method of matching, the direct group gained an average of 24.27 examples per pupil; the indirect group, 26.55 examples. Since the difference between the mean gains (2.28) was less than four times its probable error (1.00), it cannot be said with certainty that the indirect group was superior to the direct group. Since, however, the critical ratio (the difference divided by the probable error of the difference) was found to be 2.28, there were ninety-four chances in a hundred that the true difference was greater than zero. In Grade II

TABLE II

Results on Final Tests Achieved by Groups Receiving Direct Instruction and by Groups Receiving Indirect Instruction on Addition Combinations

Group	Buswell-John Complex-Addition Test				Test on Combinations				Courtis Test	
	Mean Final Score	Mean Number of Minutes	Mean Gain	Number of Pupils Excelling Corresponding Pupils	Mean Final Score	Mean Number of Minutes	Mean Gain	Number of Pupils Excelling Corresponding Pupils	Mean Final Score	Number of Pupils Excelling Corresponding Pupils
	Grade II—First Method of Matching									
Direct group	35.21	20.15	24.27	12	95.27	7.30	26.54	15	46.55	14
Indirect group	37.91	20.24	26.55	21	97.06	8.00	28.64	16	47.66	16
Difference*	2.70	− 0.09	2.28	.....	1.79	−0.70	2.10	.....	1.11	.....
Probable error of difference	.....	.....	1.00	.....	.....	.....	3.96	.....	2.98	.....
	Grade II—Second Method of Matching									
Direct group	35.63	15.57	24.77	10	94.90	7.30	18.20	14	45.83	15
Indirect group	37.83	20.83	26.80	18	97.00	8.16	20.00	15	46.80	12
Difference	2.20	− 5.26	2.03	.....	2.10	−0.86	1.80	.....	0.97	.....
Probable error of difference	.....	.....	0.95	.....	.....	.....	2.86	.....	2.13	.....
	Grade I—First Method of Matching									
Direct group	29.18	24.45	24.00	13	91.42	9.64	52.97	19	44.15	14
Indirect group	30.85	22.52	25.85	17	91.42	9.27	52.00	13	46.97	18
Difference	1.67	1.93	1.85	.....	0.00	0.37	− 0.97	.....	2.82	.....
Probable error of difference	.....	.....	1.45	.....	.....	.....	4.72	.....	2.10	.....

* The differences marked with a minus sign were in favor of the direct group; those unmarked were in favor of the indirect group.

TABLE II—*Continued*

Group	Buswell-John Complex-Addition Test				Test on Combinations				Courtis Test	
	Mean Final Score	Mean Number of Minutes	Mean Gain	Number of Pupils Excelling Corresponding Pupils	Mean Final Score	Mean Number of Minutes	Mean Gain	Number of Pupils Excelling Corresponding Pupils	Mean Final Score	Number of Pupils Excelling Corresponding Pupils
	Grade I—Second Method of Matching									
Direct group	27.86	23.86	23.22	10	90.50	9.50	36.64	14	42.78	9
Indirect group	31.36	22.50	27.22	16	90.50	9.40	37.61	13	48.89	18
Difference	3.50	1.36	4.00	.....	0.00	0.10	0.97	.....	6.11	.....
Probable error of difference	.....	.....	1.62	.....	.....	.....	4.75	.....	2.68	.....

under the second method of matching, the probable error of the difference between the mean gains (0.95) indicated that there were ninety-two chances in a hundred that the true difference was greater than zero.

The difference between the mean gains in Grade I under the first method of matching was in favor of the indirect group but was not great enough to establish with certainty the superiority of this group. The chances were eighty in one hundred, however, that the true difference was greater than zero. In Grade I under the second method of matching, the difference in mean gain favored the indirect group, and the chances were ninety-five in a hundred that the true difference was greater than zero.

Although the differences were not great enough to warrant a certain conclusion in any case, the results in complex addition favored the indirect group. It should also be noted that in every comparison there were more indirect pupils who exceeded the direct pupils with whom they were matched than vice versa.

Relative gains in addition combinations.—The final mean scores on the addition combinations showed a difference in favor of the in-

direct group in Grade II under each method of matching. In Grade I the mean final scores were exactly the same for the two methods of teaching the combinations, no advantage being indicated for either.

In Grade II under the first method of matching, the difference between the mean gains in the addition-combinations test favored the indirect group, but the probable error of the difference (3.96) made it very improbable that a true difference existed between the groups. In Grade II under the second method of matching, the difference favored the indirect group. In Grade I the differences were small, one favoring the direct, the other the indirect, method.

The numbers of cases in which a pupil excelled the pupil with whom he was matched were nearly the same, the indirect group having the greater number in two cases and the direct group in two.

The differences between the results for the two methods on the addition combinations were thus found to be small and indecisive.

Comparison of final scores on the Courtis test.—The results on the Courtis test favored the indirect method in all four comparisons, but the differences in two comparisons were too small to be significant. The probable error of the difference (2.98) between the mean final scores for Grade II under the first method of matching indicated that there were fifty-nine chances in a hundred that the true difference was greater than zero. The difference was even smaller in Grade II under the second method of matching. In Grade I under the first method of matching, the difference was in favor of the indirect group, and the probable error of the difference (2.10) indicated eighty-two chances in one hundred that the true difference was greater than zero. In Grade I under the second method of matching, however, the difference between the means was fairly large and favored the indirect group. The probable error of this difference (2.68) indicated that there were ninety-six chances in a hundred that the true difference was greater than zero. In general, the evidence from the Courtis test favored the indirect instruction in direction but not in sufficient degree to establish the certainty of a difference between the methods of teaching.

Relative achievement on informal tests.—In addition to the final tests, six informal tests in complex addition were employed. These tests were designed to cover the work as it was taught. One test was administered to compared groups at the end of each period of ap-

proximately two weeks. The results of the informal tests are given in Table III and are consistent with those of the other tests. In

TABLE III

RESULTS ON INFORMAL TESTS IN COMPLEX ADDITION ACHIEVED BY GROUPS RECEIVING DIRECT INSTRUCTION AND GROUPS RECEIVING INDIRECT INSTRUCTION ON ADDITION COMBINATIONS

Group	Grade II				Grade I			
	First Method of Matching		Second Method of Matching		First Method of Matching		Second Method of Matching	
	Mean Score	Mean Number of Problems per Minute	Mean Score	Mean Number of Problems per Minute	Mean Score	Mean Number of Problems per Minute	Mean Score	Mean Number of Problems per Minute
Test I:								
Direct group..	13.30	3.07	13.1	3.02	13.64	2.83	13.64	2.83
Indirect group.	14.81	3.09	14.3	2.91	15.12	3.12	15.03	3.14
Difference*.	1.51	0.02	1.2	−0.11	1.48	0.29	1.39	0.31
Test II:								
Direct group..	11.06	1.80	11.7	1.88	12.21	1.39	11.39	2.81
Indirect group.	9.76	1.95	10.4	1.79	15.30	2.00	15.14	2.16
Difference..	−1.30	0.15	− 1.3	−0.09	3.09	0.61	3.75	−0.65
Test III:								
Direct group..	8.93	1.24	9.1	1.28	9.73	0.78	9.07	0.75
Indirect group.	9.21	1.37	8.9	1.35	11.39	0.94	11.10	0.91
Difference..	0.28	0.13	− 0.2	0.07	1.66	0.16	2.03	0.16
Test IV:								
Direct group..	11.81	1.37	12.0	1.34	11.82	0.97	11.90	1.02
Indirect group.	13.33	1.55	12.9	1.49	12.67	1.02	12.07	1.00
Difference..	1.52	0.18	0.9	0.15	0.85	0.05	0.17	−0.02
Test V:								
Direct group..	14.60	1.29	14.8	1.34	12.55	0.75	12.50	0.73
Indirect group.	15.72	1.29	15.5	1.25	12.48	0.83	12.28	0.81
Difference..	1.12	0.00	0.7	−0.09	− 0.07	0.08	− 0.22	0.08
Test VI:								
Direct group..	14.33	1.09	14.2	1.30	9.61	0.59	9.82	0.60
Indirect group.	14.69	1.27	14.5	1.30	11.24	0.76	10.60	0.75
Difference..	0.36	0.18	0.3	0.00	1.63	0.17	0.78	0.15

* The differences marked with a minus sign were in favor of the direct group; those unmarked were in favor of the indirect group.

Grade II under the first method of matching, the indirect group made a higher mean score on five of the six informal tests. In Grade

II under the second method of matching, the indirect group excelled in four of the six tests. In Grade I under the first method of matching, the indirect group excelled in five tests; under the second method of matching, in five. The differences were consistently on the side of the indirect method, but they were not large enough to establish its superiority with certainty.

Rate of writing as a factor.—The amount and the direction of the differences on these tests seemed to indicate that better results, in general, ensue from the indirect than from the direct method. These results should be interpreted in the light of the data on rate of writing figures obtained from the Courtis test. Table IV shows that the direct group in every case wrote figures more rapidly than the corresponding indirect group. Rate of writing numbers was therefore an uncontrolled factor that favored the direct groups. These data on rate of writing thus increase the degree of certainty attaching to the conclusion that the indirect method is superior to the direct.

TABLE IV

RATE OF COPYING FIGURES ON COURTIS STANDARD RESEARCH TESTS ATTAINED BY GROUPS RECEIVING DIRECT INSTRUCTION AND GROUPS RECEIVING INDIRECT INSTRUCTION ON ADDITION COMBINATIONS

Group	First Method of Matching	Second Method of Matching
Grade II:		
Direct group	73.70	74.56
Indirect group	66.51	65.76
Grade I:		
Direct group	68.70	68.25
Indirect group	65.61	63.59

Relative achievement of bright and dull pupils.—An effort was made to determine the relative effectiveness of each method of teaching with bright and with dull pupils. The pupils of compared groups were matched, insofar as possible, according to intelligence quotients, and each group was then divided into a high and a low section. Twenty-seven pairs of bright pupils and twenty-one pairs of dull pupils were organized in the two grades. The gains on the Bus-

well-John complex-addition test, the gains in the test on the combinations, and the final scores on the Courtis test were computed to determine which of the two methods of teaching seemed more effective with the types of pupils mentioned.

The data are presented in Table V. In the case of the bright pupils, the indirect group in Grade II gained an average of 3.0 examples more on the complex-addition test than the direct group, and in Grade I the indirect pupils gained an average of 4.2 examples more

TABLE V

MEAN GAINS MADE BY BRIGHT AND DULL PUPILS IN GROUPS RECEIVING DIRECT INSTRUCTION AND GROUPS RECEIVING INDIRECT INSTRUCTION ON ADDITION COMBINATIONS

	Bright Pupils		Dull Pupils	
	Direct Group	Indirect Group	Direct Group	Indirect Group
Grade II:				
Mean intelligence quotient	115	115	104	104
Mean gain on Buswell-John complex-addition test	25.0	28.0	23.6	24.0
Mean gain on combinations test	19.7	23.0	34.8	22.3
Mean final score on Courtis test	47.0	55.5	43.0	45.0
Grade I:				
Mean intelligence quotient	114	114	99	99
Mean gain on Buswell-John complex-addition test	26.8	31.0	19.7	21.2
Mean gain on combinations test	47.3	56.5	10.2	4.2
Mean final score on Courtis test	43.5	55.1	40.2	39.5

than the direct. On the combinations test the average gain of the indirect group excelled that of the direct group by 3.3 examples in Grade II and by 9.2 examples in Grade I. On the Courtis test the gain of the indirect group was greater by 8.5 points in Grade II and by 11.6 points in Grade I. The evidence points toward the superiority of the indirect method for the brighter pupils in both complex addition and addition combinations.

For the slower pupils the gains in the complex-addition test under the indirect method were not appreciably higher than those under the direct method. There was a difference of 0.4 of an example in Grade II and of 1.5 in Grade I. In other words, the duller pupils

did not appreciably profit by the indirect method in complex addition. On the combinations test the average gain under the direct method in Grade II was 12.5 combinations greater than the gain under the indirect method. In Grade I there was a difference of 6.0 combinations in favor of the direct method. The results of the Courtis test were consistent with the results of the combinations test in Grade I, the direct group having the advantage of 0.7 of a point, but were inconsistent in Grade II. The differences in the gains of the slower pupils were all small except in the case of the addition combinations, and these were markedly on the side of the direct method in both Grades I and II.

SUMMARY

The experiment was conducted to determine whether the addition combinations can be taught more effectively in isolation or incidentally in connection with more complex addition. The first procedure is referred to as the direct method; the second, as the indirect method.

In comparison with the direct method, the indirect method of teaching the addition combinations was found, in general, to yield better results in complex addition and as good or better results on the addition combinations. With the brighter pupils the indirect method led to better results both in complex addition and in skill on the addition combinations. With the slower pupils the indirect method yielded as good results as the direct in complex addition, while the direct method yielded better results on isolated combinations. The differences between the mean scores for comparable groups were, in only a few cases, of sufficient magnitude to establish the conclusion with certainty that one method was superior to the other. In general, however, the results favored the indirect method, not only as judged by the consistency with which the differences were on the side of this method, but also as judged by the fact that the differences were large enough to make its superiority highly probable. These conclusions, based on relative improvement shown by objective tests, are further supported by the fact that the pupils using the direct method had a higher average rate of writing figures.

CORRELATIONS OF INFORMATION WITH OTHER ABILITIES AND TRAITS IN GRADE I[1]

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INTRODUCTION

This report presents a minor phase of a study of reading readiness and reading progress carried on from 1933–36 in the primary grades of the Horace Mann School of Teachers College, Columbia University.

During the school year 1933–34 a variety of tests were given to twenty-five children in Grade I of the Horace Mann School. These included tests of reading readiness; many of the Gates Reading Diagnosis Tests; some reading-achievement tests; mental-ability tests, such as the Stanford Revision of the Binet-Simon Intelligence Scale and various performance tests; certain psychological tests, for example, tests of perception and perseveration; and several measures of psychophysical and personality traits and of home background. The purpose of the study was to examine any possible relations that might exist between measurable traits and abilities and early progress in the mechanics of reading.

The children of the group came from well-to-do homes. A large percentage of the parents were professional people. The average chronological age of these pupils was 6.31; the average mental age, 7.61; and the average intelligence quotient, 120.6.

Nearly every test and measurement was administered individually, under carefully controlled conditions, by reliable persons accustomed to administering tests to young children. The co-operation of the pupils was almost invariably excellent. It is believed, for these reasons, that errors of examination were unusually low.

This report presents correlations derived from measures of information with seventy-six other measures and appraisals of the

[1] Prepared with the assistance of the United States Works Progress Administration, New York City, Project 65-97-295, Subproject 25.

pupils. Two tests of information were given. One was the Range of Information, Scale A, of the Van Wagenen Reading Readiness Tests. It consisted of thirty questions, such as the following:

What does a rubber ball do when you drop it?
What is the color of an apple before it is ripe?
What do we call a man who raises corn and wheat?

The other was Test 6 of the Metropolitan Readiness Test by Hildreth, Griffiths, and Orleans. It consisted of sixteen sets of pictures. The children were told to mark certain pictures in successive rows of pictures as directed. For example:

Mark what you wear on your feet.
Mark the thing in which to ride in the air.
Mark the thing to carry when it rains.

Correlations of these two tests were made with many of the other seventy-six measures, in particular with several reading tests, some letter tests, many mental tests, a variety of psychophysical appraisals, and a few personality measures.

The data of the study are in terms of correlations obtained by the rank-order method. To make it possible to secure the rank orders, all measures and appraisals were reduced to numerical scores. Owing to lack of facilities it was not feasible to make all the computations that were possible in the original study. A "finder" device was used to select for computation the correlations that seemed to promise significance. It is believed that through the use of this device, although it was not altogether accurate, all the high and the fairly high correlations were found. The correlations omitted were probably below .50, and most of them were probably nearer .00 than .50. The probable errors of rank-order correlation coefficients, when the number of cases is 25, range from $\pm .0237$ for .90 to $\pm .1335$ for .10.

The validity of many of the measures and appraisals is uncertain. Few correlations of seemingly unusual size were obtained, however, and few which were inconsistent with other correlations for the same kinds of traits and abilities as found in the complete data of the original study. The opinion of the teacher, of the school psychologist, and of other qualified persons who have studied the figures is that the results have rather high validity.

TABLE I

CORRELATIONS OF THE INFORMATION TESTS OF TWO READING-READINESS TESTS WITH VARIOUS OTHER MEASURES

MEASURE CORRELATED	CORRELATION WITH INFORMATION TESTS	
	Van Wagenen	Metropolitan
Metropolitan Readiness Test:		
Vocabulary	.74	.44
Total	.67	.52
Numbers	.62	.54
Seguin-Witmer-Sylvester Form Board, Time	.59	.44
Van Wagenen Reading Readiness Tests, Memory Span for Ideas	.58	.66
Total number of errors	.54	.40
Metropolitan Readiness Test, Information	.53	.....
Healy Picture Completion Test, II	.53	.41
Gates Reading Diagnosis Tests, IX, 9, [Give] Letter Sounds	.52	.36
Total time	.50	.....
Metropolitan Readiness Test, Drawing a Man	.49	.....
Gates Primary Reading Test, Type 3, Reading of Directions, March, 1934	.49	.32
Mental age	.48	.51
Van Wagenen Reading Readiness Tests, Perception of Relations	.48	.....
Teacher's ranking in reading ability, November, 1933, prediction	.48	.36
Gates Primary Reading Test, Type 1, Word Recognition, November, 1933	.47	.17
Tapping	.47	.27
Gates Reading Diagnosis Tests:		
X, 2, Recognition of Letter Sounds	.43	.....
XV, 1–4, Total Memory Span	.42	.43
Total matching of symbols	.41	.....
Gates Primary Reading Test, Type 1, Word Recognition, May, 1934	.41	.19
Van Wagenen Reading Readiness Tests, Word Discrimination	.40	.....
Total vocabulary test	.39	.32
Hildreth First Grade Reading Analysis Test, Total	.36	.34
Teacher's ranking in reading ability, May, 1934	.34	.22
Height	.33	.18
Chronological age	.29	.04
Gates Primary Reading Test, Type 1, Word Recognition, March, 1934	.25	.07
Intelligence quotient	.23	.51
Reversals, visual perception	.21	−.26
Perception, visual	.20	.34
Grip	.13	.08
Personality rating	.10	.35
Reversals, auditory perception	−.05	.00
Weight	−.07	−.13
Nervousness index	−.09	−.07
Undesirable behavior traits	−.16	−.14
Motor co-ordination	−.17	.31
Perseveration (Maller-Elkin Attention Test)	−.18	−.01
Nutrition	−.27	−.16

TABLE I—*Continued*

Measure Correlated	Correlation with Information Tests	
	Van Wagenen	Metropolitan
Personal traits	—.42	.11
Gates Primary Reading Test, Type 3, Reading of Directions, May, 1934		.25
Hildreth First Grade Reading Analysis Test, Matching Words		.39
Gates Reading Diagnosis Tests:		
IX, 10, Name Capital Letters		.42
XI, 2, Distinguish Words		.38
XIII, 1 and 2, Write Words		.39
XV, 2, Memory Span, Letters		.40
Van Wagenen Reading Readiness Tests:		
Range of Information		.53
Vocabulary		.47
Pintner-Patterson Manikin Test		.39
Steadiness		.42

FINDINGS

Table I shows the correlations of each information test with the other measures, arranged in order of the size of the correlations of the measures with the Van Wagenen test. The correlation between the two information tests (.53) is not particularly high.

Three correlations of the Van Wagenen information tests with other measures are above .60, namely, the Van Wagenen information test with the Metropolitan vocabulary test, .74; with the Metropolitan total score, .67; and with the Metropolitan test on numbers, .62. The correlation of the Van Wagenen test with the "Total vocabulary test" is .39. This test was made up of the two columns of the vocabulary test of the Stanford Revision of the Binet-Simon tests, twenty action-agent words from the Woodworth and Wells Association Tests,[1] and twenty-five words from the Iowa kindergarten vocabulary scale.[2] The highest correlation of reading with the

[1] R. S. Woodworth and Frederic Lyman Wells, *Association Tests*, p. 62. Psychological Monographs, Vol. XIII, No. 5. Princeton, New Jersey: Psychological Review Co., 1911.

[2] Madorah Elizabeth Smith, *An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children*, p. 51. University of Iowa Studies in Child Welfare, Vol. III, No. 5. Iowa City, Iowa: University of Iowa, 1926.

Van Wagenen test is .49, on the Gates Primary Reading Test, Type 3, Reading of Directions. The teacher's May ranking of pupils' ability in reading correlates .34 with the Van Wagenen information test.

The only correlation above .60 for the Metropolitan information test is that with the Van Wagenen memory-span test (.66). This memory-span test requires the repetition of sentences of increasing length. The correlation of the Metropolitan information test and the teacher's May ranking of pupils' ability in reading is .22.

Table II shows the correlations of the two information tests with groups of reading tests, letter tests, mental tests, psychophysical measures, and personality appraisals.

The correlations of the two information tests with reading tests range from .07 to .49. The averages are .40 and .26; for both together, .33. These correlations are not high and indicate that, for these children, the relative extent of their information had little relation to their reading ability.

The correlations of the two information tests with knowledge of letters range from .36 to .52. The averages are .48 and .39; the average of both together is .44. Although these correlations are a little higher than those for the reading tests, they are far from high and probably indicate little direct relationship.

The correlations of the two information tests with mental tests range from .23 to .74. The averages are .50 and .47; for both together, .49. These correlations are, in the main, fairly high and, as would be expected, show the closest relations with the information tests found for any of the groups of tests.

The correlations of the two information tests with psychophysical measures range from $-.27$ to $+.47$. The averages are .08 and .13; for both, .11. The averages for personality measures are .02 and .06; for both, .04. The range is from $-.42$ to $+.54$. In both these groups the low averages and the wide ranges indicate little significance for the correlations. One trait, however, seems to have a consistent and fairly high relation, namely, total number of errors, which correlates .54 and .40, respectively, with the two information tests.

TABLE II

CORRELATIONS OF THE INFORMATION TESTS OF TWO READING-READINESS TESTS WITH VARIOUS OTHER TYPES OF MEASURES

MEASURE CORRELATED	CORRELATION WITH INFORMATION TESTS	
	Van Wagenen	Metro-politan
Reading tests:		
Gates Primary Reading Test:		
Type 1, Word Recognition, November, 1933	.47	.17
Type 1, Word Recognition, March, 1934	.25	.07
Type 3, Reading of Directions, March, 1934	.49	.32
Type 1, Word Recognition, May, 1934	.41	.19
Type 3, Reading of Directions, May, 1934	.....	.25
Hildreth First Grade Reading Analysis Test:		
Matching Words	.....	.39
Total	.36	.34
Teacher's ranking in reading ability, November, 1933, prediction	.48	.36
Teacher's ranking in reading ability, May, 1934	.34	.22
Average	.40	.26
Letter tests:		
Gates Reading Diagnosis Tests:		
IX, 9, [Give] Letter Sounds	.52	.36
IX, 10, Name Capital Letters	.....	.42
X, 2, Recognition of Letter Sounds	.43	.....
XI, 2, Distinguish Words	.....	.38
XIII, 1 and 2, Write Words	.....	.39
XV, 2, Memory Span, Letters	.....	.40
Average	.48	.39
Mental tests:		
Gates Reading Diagnosis Tests, XV, 1–4, Total Memory Span	.42	.43
Metropolitan Readiness Test:		
Vocabulary	.74	.44
Numbers	.62	.54
Information	.53	.....
Drawing a Man	.49	.....
Van Wagenen Reading Readiness Tests:		
Range of Information	.....	.53
Perception of Relations	.48	.....
Vocabulary	.....	.47
Memory Span for Ideas	.58	.66
Word Discrimination	.40	.....
Total vocabulary test	.39	.32
Healy Picture Completion Test, II	.53	.41
Pintner-Patterson Manikin Test	.....	.39
Seguin-Witmer-Sylvester Form Board, Time	.59	.44
Mental age	.48	.51
Intelligence quotient	.23	.51
Average	.50	.47

TABLE II—*Continued*

Measure Correlated	Correlation with Information Tests	
	Van Wagenen	Metropolitan
Psychophysical measures:		
Chronological age	.29	.04
Grip	.13	.08
Height	.33	.18
Motor co-ordination	−.17	.31
Nutrition	−.27	−.16
Perception	.20	.34
Perseveration (Maller-Elkin Attention Test)	−.18	−.01
Steadiness	.....	.42
Tapping	.47	.27
Weight	−.07	−.13
Average	.08	.13
Personality measures:		
Nervousness index	−.09	−.07
Personality rating	.10	.35
Personal traits	−.42	.11
Reversals, auditory perception	−.05	.00
Reversals, visual perception	.21	−.26
Total number of errors	.54	.40
Undesirable behavior traits	−.16	−.14
Average	.02	.06

In Table III are shown, for convenience of comparison, other correlations obtained from the complete data of the original study.

TABLE III

AVERAGE CORRELATIONS OF A GROUP OF READING TESTS WITH VARIOUS PSYCHOLOGICAL MEASURES

Measure Correlated	Correlation with Reading Tests
Mental age (Stanford-Binet)	.51
Memory span (averages)	.42
Information (averages)	.33
Vocabulary (composite)	.31
Performance tests (averages)	.30
Perseveration (Maller-Elkin Attention Test)	.23
Perception (an original test)	.22

CONCLUSION

For the twenty-five first-grade children tested, the two information tests used in the study seem not to have any particularly significant relations with reading tests or with other tests of varied character.

SELECTED REFERENCES ON TEACHER EDUCATION[1]

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University of Chicago

The references included in this bibliography were published between July 1, 1935, and June 30, 1936. These publications discuss significant issues relating to the education of teachers in elementary and secondary schools and in higher institutions. Three criteria were used in selecting from the much larger number of references published those included in this list: (1) objective analyses and statistical accounts of important aspects of teacher education; (2) comprehensive reports in the form of bulletins, yearbooks, and reports of proceedings; (3) materials which are reasonably accessible.

616. AMERICAN ASSOCIATION OF TEACHERS COLLEGES. *Fifteenth Yearbook, 1936.* Oneonta, New York: Charles W. Hunt, Secretary (State Normal School). Pp. 152.

Includes the proceedings of the 1935 meeting of the association. The program was organized around the following general topics: "Administrative Problems," "A Study of Teaching Procedures," "A Salute to Service," and "Problems Raised by the National Survey of the Education of Teachers."

617. BAKER, FRANK E. "A Program of Guidance for Teacher-educating Institutions," *Educational Administration and Supervision*, XXI (December, 1935), 657–71.

Describes the guidance program at the Milwaukee State Teachers College.

618. BILLINGS, NEAL. "Efforts To Evaluate the Milwaukee Teacher-training Experiment," *Educational Administration and Supervision*, XXII (April, 1936), 241–59.

Summarizes the judgments of faculty and students concerning the value of the integrated program in educational theory and practice.

[1] See also Item 74 (Parsons) in the list of selected references appearing in the February, 1936, number of the *Elementary School Journal*, Item 393 (Kyte) in the September, 1936, number of the *Elementary School Journal*, Item 519 (Van Patter) in the October, 1936, number of the *School Review*, Item 568 (Douglass) in the November, 1936, number of the *School Review*, and Item 626 (Webb) in the December, 1936, number of the *School Review*.

619. BRINK, WILLIAM G. "Internship Teaching in the Professional Education of Teachers," *Educational Trends*, IV (June, 1936), 32–41.

Discusses the need for better-prepared teachers, the values derived from internship teaching, and the program of internship teaching under the direction of Northwestern University and its co-operating schools.

620. BURTON, WILLIAM H., and IBANEZ, DALMYRA M. "Introductory Courses in Education," *Journal of Educational Research*, XXIX (November, 1935), 171–86.

Presents an analysis of the contents of seventeen introductory textbooks in education.

621. BUTLER, FRANK A. "Prediction of Success in Practice Teaching," *Educational Administration and Supervision*, XXI (September, 1935), 448–56.

Discusses certain criteria for predicting success in practice teaching, presents guiding principles for the selection of criteria, and describes a plan for predicting success in practice teaching.

622. CAMPBELL, DOAK S., and SMITH, C. CURRIEN. *The Education of Secondary School Teachers*. Report of Joint Committee on Study of Curricula of the Southern Association of Colleges and Secondary Schools. Nashville, Tennessee: Division of Surveys and Field Studies, George Peabody College, 1936. Pp. x+204.

Presents the results of the committee's study of institutional aims and functions; the teaching personnel; the selection, guidance and promotion of students; the curriculum content and pattern; the training school and directed teaching; and teacher supply, demand, and certification. Includes recommendations for a program of teacher education.

623. DAWSON, MILDRED A. "An Attempt To Improve Lesson Planning for Teachers-in-Training," *Educational Method*, XV (February, 1936), 235–41.

Describes the procedures adopted by a director of an elementary training school to improve the types of lesson plans prepared by student teachers.

624. ELIASSEN, R. H., and ANDERSON, EARL W. "Investigations of Teacher Supply and Demand Reported in 1935," *Educational Research Bulletin*, XV (April 15, 1936), 105–10.

Discusses the major findings of twenty-six investigations of teacher supply and demand reported in 1935.

625. ELLIFF, MARY. *Some Relationships between Supply and Demand for Newly Trained Teachers*. Teachers College Contributions to Education, No. 654. New York: Teachers College, Columbia University, 1935. Pp. 70.

Presents recommendations, based on a factual analysis of conditions in Missouri, for controlling both the number and the type of newly trained teachers.

626. ENGLEMAN, J. O. "Health Education and Health Service in Kent State University with Particular Reference to Physical Equipment," *Educational Administration and Supervision*, XXI (November, 1935), 600–606.

Discusses briefly such items as organization, administration, departmental rooms, equipment, financial support, and personnel of the health department.

627. FRAZIER, BENJAMIN W. *Education of Teachers: Selected Bibliography* (June 1, 1932, to October 1, 1935). United States Office of Education Pamphlet No. 66 (1936). Pp. vi+42.

Includes 275 annotated references selected from approximately 1,700 references published during the interval covered.

628. HALE, GENEVIEVE. "Desirable Types of Advanced Training for Teachers of English in Secondary Schools," *Educational Administration and Supervision*, XXII (January, 1936), 61–71.

Presents the results of a questionnaire study to determine the nature of the graduate work that should be taken by teachers of English to "meet the general secondary requirement of the state of California as well as to acquire a Master's degree."

629. HEILMAN, J. D., and ARMENTROUT, W. D. "The Rating of College Teachers on Ten Traits by Their Students," *Journal of Educational Psychology*, XXVII (March, 1936), 197–216.

Presents a summary of the ratings of forty-six teachers by the students in fifty classes on each of ten traits "regarded as important in the personality of a good teacher."

630. HUNT, CHARLES W. "The American Association of Teachers Colleges," *Educational Administration and Supervision*, XXI (October, 1935), 490–96.

Discusses some of the problems of the American Association of Teachers Colleges with special reference to objectives, standards, and accrediting policies.

631. JUDD, CHARLES H. "Raising the Level of the Education of Teachers," *School Review*, XLIV (April, 1936), 257–67.

Points out two limitations in current programs of teacher education, namely, the failure to stimulate students "to independent intellectual activity of a vigorous type in their professional careers" and the requirement of so-called "professional courses."

632. LINDER, ROSCOE GEORGE. *An Evaluation of the Courses in Education of a State Teachers College by Teachers in Service.* Teachers College Contributions to Education, No. 664. New York: Teachers College, Columbia University, 1935. Pp. viii+156.

Summarizes criticisms from graduates and students concerning the extent and nature of the duplication or repetition of topics in education courses and their suggestions for the better choice and treatment of topics for teachers in training.

633. LINTON, CLARENCE. "New College Plan for the Education of Teachers," *Teachers College Record*, XXXVII (January, 1936), 305–12.

Presents seven assumptions underlying the New College Plan at Teachers College, Columbia University, and discusses four of these at length.

634. LUDEMAN, W. W. "Academic and Personal Qualities of High-School Graduates Desired by Teacher-training Institutions," *Educational Administration and Supervision*, XXII (April, 1936), 282–84.

Presents lists of academic and personal qualities which, in the judgment of heads of departments of education, are most desired by teacher-training institutions. Also gives the judgments of the same persons concerning present high-school graduates with respect to each quality listed.

635. MCCONNELL, ROBERT E. "Book Selection for a Teachers College Library," *Educational Administration and Supervision*, XXI (October, 1935), 551–54.

Describes the basis adopted in a state normal school for distributing library funds among various departments in harmony with needs.

636. MCCONNELL, ROBERT E. "Speech Education for the Teacher in Training," *Elementary English Review*, XII (December, 1935), 274–76.

Discusses the purpose, nature, and scope of the speech training provided for prospective elementary-school teachers.

637. MATHEWS, C. O. "The Introductory Course in Educational Measurements," *Educational Administration and Supervision*, XXI (September, 1935), 431–47.

Summarizes "the more important findings of investigators and writers in regard to the objectives and content which seem most suitable for the introductory course in educational measurements."

638. MEAD, A. R. "Using a Laboratory School for Demonstrations for Teachers in Service," *Educational Administration and Supervision*, XXII (February, 1936), 134–40.

Describes the general plan developed in the Westfield (Massachusetts) State Teachers College.

639. MURPHY, A. B. "Some Considerations in Making a Curriculum for Training Teachers for Secondary Schools," *Educational Administration and Supervision*, XXI (December, 1935), 686–91.

Discusses criteria for the curriculum in general for pre-professional training and for professional training.

640. MYERS, ALONZO F. (Editor). *Problems in Teacher-Training*. Proceedings of the 1935 Spring Conference of the Eastern-States Association of Professional Schools for Teachers, Vol. X. New York: Prentice-Hall, Inc., 1936. Pp. xx+354.

Reports the programs of the administrative and instructional divisions, of the sections for faculty members, and of the student section.

641. PARSONS, RHEY BOYD. "Teacher Education in Tennessee," *School Review*, XLIII (November, 1935), 690–99.

Reports the results of a study of course offerings in education in Tennessee colleges in 1933–34.

642. PITTENGER, L. A. "Instructional Materials and Techniques in Health Education at Ball State Teachers College," *Educational Administration and Supervision*, XXI (November, 1935), 592–99.

Considers such matters as the principles underlying the health program, teacher personnel, physical provisions for the health program, the scientific basis for health, and some of the services rendered.

643. PULLIAM, ROSCOE. "The Teachers' College in the Modern World," *School and Society*, XLII (November 30, 1935), 721–26.

The inaugural address of the president of the Southern Illinois State Teachers College. Discusses the demands made on the schools in the present day compared with the demands made sixty-one years ago, when this institution was established.

644. SANGREN, PAUL V. "The Selection of Prospective Teachers," *Journal of Higher Education*, VI (November, 1935), 435–39.

Favors an accumulative record and the development of co-ordinated personnel agencies as the basis for intelligent selection and retention after admission to a teacher-training institution.

645. SHANNON, J. R. "A Comparison of Three Means for Measuring Efficiency in Teaching," *Journal of Educational Research*, XXIX (March, 1936), 501–8.

Reports teaching efficiency in terms of attention scores, score-card scores, and general informal estimates of eight different groups of student teachers. Presents correlations between the various measures.

646. SMITH, DAVID EUGENE. *Challenging Problems in American Schools of Education*. The Fourth of a Series of Lectures under the Provisions of the Julius and Rosa Sachs Endowment Fund. New York: Teachers College, Columbia University, 1935. Pp. 48.

Describes certain immediate problems confronting American schools of education and discusses necessary steps in their solution.

647. SMITH, E. L. "A Critical Analysis of Rating Sheets Now in Use for Rating Student-Teachers," *Educational Administration and Supervision*, XXII (March, 1936), 179–89.

Analyzes rating sheets used by colleges and universities in the North Central Association of Colleges and Secondary Schools in the light of five criteria representing the consensus of judgment of previous writers in this field.

648. SMITH, RUBERTA N. "A Viewpoint in Preparing Teachers of Reading," *Elementary English Review*, XII (December, 1935), 271–73.

Describes some of the broader conceptions of teaching which a student should derive from his study of reading problems.

649. SMITH, T. V., and CLIFFORD, W. E. C. *Senate Committee Report on the Normal Colleges—State of Illinois*. De Kalb, Illinois: Industrial Arts Department, Northern Illinois State Teachers College, 1936.

Presents recommendations based on observations of the work in the five state teachers' colleges in Illinois.

650. "The Student Personnel Program at the Indiana State Teachers College," *Teachers College Journal*, VII (January, 1936), 19–47. Terre Haute, Indiana: Indiana State Teachers College.

Discusses the purpose and organization of the student personnel program and describes the contribution of various officers and staff members.

651. "Training and Certification of High School Teachers in West Virginia University." Preliminary Report on Curricula, Courses, and Procedures Leading to State Certification and to a Bachelor's Degree, Co-ordinated by the Senate Committee on Teacher Training and Approved by the College of Education. Morgantown, West Virginia: West Virginia University, 1936. Pp. 39.

Considers requirements for certification, teaching combinations, and courses recommended for certification in various fields.

Educational Writings

REVIEWS AND BOOK NOTES

Making child guidance scientific.—The workers at the Psychological Clinic of the Detroit Public Schools have recently published a book[1] which is a constructive contribution to both the theory and the practice of child guidance. On the practical side the book offers a systematic aid to the diagnosis of children's problems and contains many and varied suggestions for treating them. On the theoretical side it describes the methods by which the Detroit Scale of Behavior Factors was constructed and the data on which its validity and reliability are based. The book gives also a discussion of the main intercorrelations between the factors of the scale.

By far the greater part of the book is devoted to the analysis of the sixty-six items of the scale. These items are listed under the categories of "Health and Physical Factors," "Personal Habits and Recreational Factors," "Personality and Social Factors," "Parental and Physical Factors of the Home," and "Home Atmosphere and School Factors." "As far as possible the sixty-six items are primarily basic causes of behavior difficulties. Symptoms or results of maladjustment, such as stealing, are not included since they are commonly results rather than causes" (p. 27). The scale as a whole and each item in it, except the last three, have shown statistically significant differences among groups of children (1) who have been placed in special classes for behavior-problem cases, (2) who have presented problems in the classroom, and (3) who have not presented behavior problems in the classroom.

The book will be useful either as a textbook or as a guide for practical laboratory and demonstration work in the training of clinical psychologists, visiting teachers, counselors, and others who are obliged to deal with child behavior in its broad educational and social aspects. The authors wrote primarily for persons of some training, though the book may be used with profit by teachers and others.

It is not expected or hoped that any chronic or aggravated psychopathic case can be diagnosed by the lay social worker or teacher by use of this scale, but rather that

[1] Harry J. Baker and Virginia Traphagen, *The Diagnosis and Treatment of Behavior-Problem Children*, pp. xiv+394, $2.50; *Case Record Based on the Detroit Scale of Behavior Factors*, pp. 8, $0.12. New York: Macmillan Co.

their awareness of the problem will suggest the urgent need for adequate psychiatric treatment by competent specialists.

There are many cases of behavior difficulty in rural areas or in small towns, known to visiting teachers, health nurses, and teachers, in which adequate social, psychological, and psychiatric diagnoses are not available. If such workers conscientiously study this scale as to its administration and interpretation, they should be able to use it effectively to help children who are in difficulty. There is always the danger of tactless approach to behavior factors, particularly on the latter part of the scale, dealing with the home; but these errors are not limited to workers without training . . . . . The school administrator or administrative head of any diagnostic agency should find the scale useful in securing specific checks upon the detailed work of the staff. Definiteness will surely add effectiveness to a field that, regrettably, has long been characterized by its dependence upon personal opinion and subjective evaluation [pp. 385–86].

To attempt to reduce the guesswork in any field of activity is laudable. To develop a reliable scientific analysis of methods that permits an accessible record on which the diagnosis and the treatment of behavior-problem children have been based is a distinct achievement. The Detroit Scale of Behavior Factors provides such a record. It still contains subjective elements and other limitations, of which its authors are well aware. The use of this scale provides no short cuts in diagnosis and performs no miracles in treatment; it adds organization and system to procedures which at best contain much that is incoherent.

HAROLD H. ANDERSON

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An experimental study of fear in children.—Whether fear is a useful emotion in a modern world is a question for the social philosopher. Jersild and Holmes, in a monograph[1] from the Child Development Institute of Teachers College, show that children exhibit fears, what these fears are, and some facts about how they develop.

In Part I parents' records of the fears of 136 children from 3 to 97 months of age are analyzed to show the frequency of fears, sex and age differences, resemblances between children of the same family, the behavior of children when afraid, early fears, and methods used by parents to overcome fears.

Part II is a study of fears in childhood as recalled by 303 young adults, tabulated according to the categories used in the first study, and a re-analysis, under these same categories, of a previous experiment in which records were made of the fears reported in interviews by 398 children from 5 to 12 years of age.

The most interesting and original section of the monograph is that by Holmes, in which she reports the behavior of 105 children from 24 to 71 months of age when placed in situations which might arouse fear. The situations were: (1) being left alone with a toy while the experimenter left the room; (2) walking

[1] Arthur T. Jersild and Frances B. Holmes, *Children's Fears.* Child Development Monographs, No. 20. New York: Teachers College, Columbia University, 1935. Pp. xvi+356.

on two boards, the second of which was so tilted that, as the child walked down it, it fell forward two inches to the floor; (3) going after a red ball into a narrow, dark passageway; (4) going past a queerly dressed stranger in order to get toys to play with; (5) walking a board, which was securely fastened two or more feet from the floor, to get toys; (6) hearing a loud noise made by striking an iron pipe with a hammer as the child was playing with a toy, the child being urged to go behind the screen and investigate the source of the noise; (7) touching a harmless snake in a box in order to get a toy; and (8) petting a large collie dog which was brought in on a leash.

Part IV is a summary by Jersild of the other sections and a discussion, based on these experiments and others, of the nature and the prevention of childhood fears.

One striking result of these varied approaches to the study of fear in children is the agreement with regard to situations which seem to arouse fear. Common sources, as recorded by parents, by children, and by the memory of adults, are animals, darkness, high places, strangeness, and loud noises. Older children and adults also report fear of accidents, injury, and illness, and fear of failure and personal inadequacy.

The commonly accepted hypothesis that all fears are conditioned on the fear of noise and of loss of support in early infancy is not borne out by these observations. The authors say that "any novel, intense, or unexpected stimulus with which a child is unable to cope and for which he has no adequate response" (p. 325) may arouse fear. "As the child's mental capacities mature . . . . he becomes susceptible to stimuli that earlier had no effect upon him" (p. 326). Thus, the study confirms previous findings by Gesell and Jones.

From the theoretical standpoint this monograph is an important contribution which piles up additional evidence about fear. It is also useful to parents and teachers who wish to understand what is happening to make children afraid, how they may help prevent fears, and what techniques are available for overcoming those which have already developed. The final section is particularly valuable for this purpose since it describes methods of preventing and relieving fears.

ESTHER MCGINNIS

UNIVERSITY OF MINNESOTA

Factual information in the civic field possessed by children at the sixth-grade level.—During the decade ending in 1934 a considerable body of material was assembled relative to the civic information possessed by children at the sixth-grade level. Until recently this material existed only in the seven unpublished studies that were completed between 1924 and 1935. The first of these studies was made at the University of Chicago by the author of the volume under review.[1]

[1] William H. Burton and Others, *Children's Civic Information, 1924–1935*. Southern California Education Monographs, No. 7. Los Angeles, California: University of Southern California Press, 1936. Pp. xxii+308.

The seven studies synthesized by Professor Burton involved approximately nine thousand sixth-grade children in the cities of Chicago (Illinois), Salem (Oregon), Peoria (Illinois), Cincinnati (Ohio), Los Angeles (California), and in eight urban and thirteen rural communities of North Dakota and eight urban communities of Los Angeles County (California). In four of the studies exactly the same test or inventory of 96 items was used, and in the others an inventory of 120 items was employed, 96 of which were duplicates of those making up the test used in the four studies. The inventories were sufficiently identical to make possible reliable comparisons of results.

The first six chapters of Professor Burton's synthesis are chiefly devoted to the development of the inventory used in the studies. Inasmuch as his own study was the first of the seven to be made, it was necessary for him to construct the tools. The meticulous detail involved in the account of the way the inventory was made may be inferred from the fact that 146 pages (almost a half of the entire volume) are devoted to this story. The scientific procedure exemplified in the studies that are synthesized by Professor Burton fully justifies the prolonged discussion of the chief tool used in them.

If the reader is more interested in the results obtained from administering the inventory to almost nine thousand children in several localities than he is in the way in which the inventory was developed, he will begin reading the book on page 147 instead of page 1. In the latter half of the volume he will find material relative to the sources of the data in the seven studies, the homogeneity and comparability of the groups examined, the nature and the amount of civic information possessed by typical American groups in different regions and different economic levels and by certain racial and national groups, the growth of civic information through Grades V–VIII, sex differences in the civic information possessed by sixth-grade children, and sources from which children's civic information is derived. The data assembled in each of the seven studies bearing on each of these aspects of the general problem are synthesized and interpreted by Professor Burton. The following facts are revealed concerning some of them: (1) Children in Grade VI are not well informed on the information represented by the inventory. (2) The nature of the civic information possessed by children does not vary according to regional, economic, racial, or national groups. (3) The amount of civic information possessed by children varies considerably according to regional, economic, racial, and national groups. (4) Boys are consistently superior to girls in the amount of civic information that they possess. (5) The proportion of children's civic information which is secured through out-of-school contacts is larger than the proportion which is secured through in-school contacts. (6) The chief factors requisite to an acquisition of civic information by intermediate- and upper-grade children seem to be a decent economic status and systematic instruction in school.

The studies that are synthesized in this volume collected a large amount of valuable information relative to civic education. School people everywhere owe

Professor Burton a hearty vote of thanks for the painstaking care with which he has assembled and interpreted the data contained in the studies.

R. M. TRYON

A textbook that contributes to the progress of good teaching in statistics.—Paralleling the shift in emphasis in the public-school curriculum from a formal to a more functional type of learning, there has been a tendency in the teaching of statistics to move toward emphasis on the immediately practical aspects of statistical methods as contrasted with the theoretical and abstractly systematic aspects. Attention has frequently been called to the need for teaching an understanding of the purpose and the usefulness of each statistical tool, as well as an understanding of its mathematical ancestry; for developing skills in fitting a process into a matrix of practical needs, as well as skills of routine calculation.

The values of this newer emphasis have been recognized somewhat widely, and a number of textbooks in statistical methods have been written with the avowed purpose of providing treatises that would engage the interests of the non-mathematical student and make statistical analysis available to those who experience some difficulty with highly abstract quantitative thinking.

In the main, such attempts have not succeeded. Authors of textbooks in statistics typically know too much of statistics and too little of humanity. There is a strong tendency to dress up the old outlines and the old contents with a few references to practical problems and then to advertise the book as meeting the newer objectives. As in other fields, workers pay lip service to certain goals for many years before they are able to work out the concrete steps that lead surely to the realization of those goals.

In the judgment of the reviewer, Sorenson's textbook in statistics[1] comes closer to the new concepts of statistics-teaching than have others. The general outline of the book is still conventional, but the author has made a conscientious effort to place emphasis on those aspects and topics of statistics which are likely to meet the needs of the learner; that is, space is given to the points which are most useful and to those which are difficult to grasp rather than to those points which round out a mathematical principle or statistical pattern. While the approach is still essentially formal, there is an attempt to make the imagery concrete, and there are liberal sections devoted to the use of techniques. The book is readable and should be acceptable to the average student in education.

The first half of the book consists of three introductory chapters; four chapters on averages and percentiles; one chapter on variability; and one on "shape," "The Normal Curve, Skewness, and Kurtosis." The second half devotes five chapters to ordinary correlation (including a good introduction to the subject), one chapter on other forms of correlation (including partial), and four chapters on error (sampling, probable error, attenuation, and reliability).

[1] Herbert Sorenson, *Statistics for Students of Psychology and Education*. New York: McGraw-Hill Book Co., Inc., 1936. Pp. viii+374. $3.50.

The author states in his Preface:

> Throughout the book emphasis has been placed upon interpretation, logical analysis, and the intelligent application of techniques, though not to the neglect of computational skills or the statistical techniques themselves. Besides the development of good technical training, the major objectives in the study of statistics should be the development of a wholesome skepticism, a critical attitude, and a keen quantitative sense in situations involving statistical data [p. v].

While it is not to be thought that any textbook can in itself, apart from appropriate teaching, attain these objectives, the present book may be used with a feeling of confidence that it is helping in the desired direction.

DOUGLAS E. SCATES

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Ways to aid children to compose songs.—Creative activities in music that have received attention in modern schools may be divided into two categories: (1) the construction of instruments and (2) the composing of music. Helpful material on how to make and use instruments has been available for some time, but detailed reports of how to direct children to write music have been lacking. A book recently published[1] supplies this need.

The volume is divided into three sections. Part I contrasts old and modern philosophies of education and discusses the nature and nurture of creative expression in general. Part II describes in detail methods used in actual situations to aid children to develop creative expression in music. Chapters deal with creating songs, poetry, and melody; form in music and poetry; basic rhythmic schemes and their use; response to rhythms; and music for an Indian unit. Part III gives examples of songs composed by children of different ages and levels of instruction.

The lessons described show thoughtful planning. For example, the thirteen steps taken by the teacher to help children create a tune are logically and definitely outlined. Procedures in other types of lessons are of similar quality and nature, for example, the procedures used when children record an original song on the blackboard, when they copy it in notebooks, and when the teacher writes it. In contrast to set plans are found statements indicating that a more flexible form of teaching is desirable to obtain original work of distinctive merit. For instance, the authors say that the best creative expression is sometimes overheard when children think they are unobserved. At another point the authors remark, "Inspirational work is not amenable to analysis in a series of definite steps" (p. 58). This line of thought is also held by teachers who have conducted experiments in creative work in other fields, such as literature and the graphic and plastic arts. In fact, it is generally agreed that an original creation brought

[1] Lillian Mohr Fox and L. Thomas Hopkins, *Creative School Music.* Newark, New Jersey: Silver Burdett Co., 1936. Pp. viii+326. $3.00.

about as the result of strict tutoring and dominated by the teacher is usually simple, trite, and conventional.

Great works of music in the past have come into being through individual initiative; yet group composition is the method employed in the elementary school. If the songs resulting from the present experiment are typical of this form of instruction and motivation, it would seem that the greatest value of class work lies in making children conscious of the structure of music. Group work undoubtedly provides a background for the talented child who may wish to construct original melodies, and it should develop sensitiveness to musical form in pupils less gifted.

Creating music is not a new experience to children, for many composers—Mozart, Mendelssohn, and Schumann, for example—composed at an early age. Moreover, many adults today can recall making songs in childhood, although the tunes probably were not permanently recorded. Giving time in the school program to this type of musical expression, however, is novel. In any subject opinions about subject matter, administrative practices, and teaching methods differ, particularly when an offering is an innovation in the curriculum. In the findings and viewpoints presented in the study under review, certain issues of a controversial nature are apparent. For example, one may ask: Does creative music lend itself readily to formal instruction? Can a work of high merit be manufactured within a limited time? Are the best results obtained from group activity, or should individual effort be stressed? Should the teacher force his ideas upon the individual and the group? If some pupils have a keen appreciation of beauty and expressiveness in music, should they then be allowed to carry out plans in their own way? Should a simple combination of two or three tones be dignified by the title "song," and should the music period be used to expand or develop it? Do children, of their own volition, employ the sol-fa syllables when composing a song? What proportion of the time of the music recitation may profitably be spent in copying music? What phases of instruction should be dropped from the course of study in order to provide adequate opportunity for creative expression? What environment and equipment are essential to the success of a creative program?

The report by Fox and Hopkins is an attempt to solve some of these problems and, as such, is a welcome addition to literature pertaining to music in the schools. It should open new vistas to the teacher and should stimulate further research and experimentation in the creation of music in school. Usefulness of the book, however, is not confined to the discussion of creating melodies, for the material on the rhythm band, original plays, and use of music in other subjects is significant and helpful. The section treating general principles and philosophies of teaching is valuable reading for all educators and, alone, would justify publication.

The book is substantially and attractively made. The paper and binding are good, and the print is clear. Numerous examples of songs, stories, plays, and

pictures made by children are included. A good table of contents and an index are commendable features.

ANNE E. PIERCE

UNIVERSITY OF IOWA

Social studies for the elementary grades.—It is probable that no curriculum was ever entirely satisfactory. Even in a static society there are elements of change, and the more alert individuals are dissatisfied with the outmoded elements and impatient with the delay that prevents the adding of new materials. While these observations are true of the curriculum in general, they are especially applicable to the field of the social studies. Several years ago Professor Harold Rugg and his associates at Columbia University proposed an answer to this problem for the junior high school grades. The volumes under consideration[1] are offered as the social-studies content for Grades III and IV.

By words and pictures *The First Book of the Earth* gives a vivid idea of the place of the earth in the universe and how it became a fit place for plants and animals. The story of the evolution of animals is well presented, and the early stages in the ascent of man are presented with equal effectiveness. *Nature Peoples* consists in a series of descriptions of the life of isolated groups. The Bushmen, Indians, Eskimos, Papuans, Baganda, and Bedouins are the principal groups whose modes of life are described. These two books are designed primarily for Grade III.

Communities of Men and *Peoples and Countries* are designed for Grade IV. The first of these volumes continues the treatment of social groups by giving descriptions of selected villages in Africa, Asia, Germany, and England. The book then gives a description of American communities and their ways of providing food, shelter, water, and government. The third part of the book consists in brief historical accounts of various areas. *Peoples and Countries* consists in geographic and social surveys of India, China, Russia, England, France, Germany, Italy, and Spain, together with a brief account of the Spanish occupation of South America.

These four books are well written and profusely illustrated. In fact, both the pictures ano the maps are unusually clear, timely, and appropriate. It is, therefore, unfortunate that neither the maps nor the illustrations are listed. The reader has to hunt for, and remember the location of, a picture that he wishes to utilize a second time.

The volumes contain many elements that are usually found in textbooks in geography, but the historical elements are given scant attention. Many topics usually treated in community civics, such as planning, food and water supply, and government, are also incorporated. Natural features and the geographic

[1] Harold Rugg and Louise Krueger, Man and His Changing Society: Vol. I, *The First Book of the Earth*, pp. vi+268, $0.80; Vol. II, *Nature Peoples*, pp. vi+348, $0.88; Vol. III, *Communities of Men*, pp. viii+392, $0.92; Vol. IV, *Peoples and Countries*, pp. x+482, $1.08. Boston: Ginn & Co., 1936.

environment are well described. The pupils who study these volumes carefully are bound to obtain a rather clear understanding of natural resources, man's use of these resources, and of the group co-operation necessary to utilize them.

The only major question which can be raised with respect to these books is that of curricular adequacy, and there is, of course, neither an authoritative nor a scientific answer to this question. Some teachers may doubt the advisability of teaching to Grades III and IV the planetary setting of the world, the existence of prehistoric animals that have no discernible connection with any extant forms of life, and the steps in the evolution of man. It may be that an entire volume, presumably the work of a whole semester, is too extensive a treatment of primitive groups. On the other hand, if the study of such groups does reveal the fundamental processes of human relationships, it may deserve even more than one semester. The answer to all questions concerning the suitability of the materials is to be given after the pupils have studied them. These volumes are carefully planned, clearly written, skilfully printed, and richly illustrated. They deserve and will receive widespread attention.

EDGAR B. WESLEY

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Toward better English usage.—The recognition of a need for more effective school practice in correct speech and writing has evidently furnished the motive in the preparation of the new Webster practice books[1] for junior high school. The books are justified as drill manuals through an excellent variety of exercises and tests and frequent repetitions of drill on difficult points. The series progresses from a somewhat simple presentation of grammatical elements (in Book I), with emphasis on recognition of terms and an understanding of sentence parts and relationships, to a more detailed study of parts of speech (in Book III), with emphasis on forceful arrangements of sentences and use of words.

Each book is described by the author as a "self-help" book. This characterization does not mean, however, that the book is to be used as a private manual rather than a class guide. In fact, the amount of competition introduced into the books implies the author's recognition of the social motive as an impetus to improvement. Like other so-called "self-help" textbooks, these books will probably require the usual amount of teacher direction, explanation, and guidance.

The appeal which the books will make to pupils of seventh- and eighth-grade levels might have been greatly augmented by the use of attractive illustrations and a somewhat less concentrated style of presentation. If the pupil is to be brought to feel "his individual responsibility to help himself," as the publishers say in their advertisement of the series, it is important to make the challenge as inviting as possible and to utilize natural pupil interests as a means of maintaining a maximum of application to the task of self-improvement.

[1] Edward Harlan Webster, with the co-operation of John E. Warriner, *Good English through Practice:* Book I, pp. viii+216; Book II, pp. viii+216; Book III, pp. viii+200. Yonkers-on-Hudson, New York: World Book Co., 1936. $0.72 each.

If the reviewer judges correctly the objectives of the series, it does not rest its claim for approval upon an effort to present a comprehensive and integrated course in general English. The emphasis is obviously on grammar and good usage throughout the three books. The offerings in composition and reading are much too slender to constitute an adequate basis for instruction and practice in these fields. The plan of the books, therefore, runs contrary to the current theory that in the junior high school course of study the various English disciplines should be as completely integrated as possible in the instructional program.

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